The RUBBER AGE

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LATE NEWS of the Industry

Firestone Denies Intent to Buy Fisk; Latter Develops Reorganization Plan

REORGANIZATION plans of the Fisk Rubber Company are proceeding but no offers have been received, nor is there any proposal for the sale of the company to any outside interest, according to a statement issued by Charles A. Dana, receiver. Mr. Dana's announcement followed publication of reports of a possible sale of Fisk to the Firestone Tire & Rubber Company, which was stated to have been making investigations preparatory to submitting an offer.

Harvey S. Firestone, president of the Firestone Tire & Rubber Company, has also declared that his organization is not interested "in acquiring any more rubber companies." Mr. Firestone said that a group of Firestone auditors under the direction of Harvey Hollinger, comptroller of the company, had been loaned to the Fisk company to make an audit early this month.

Meanwhile, the note and bondholders' protective committees have announced progress in their efforts to perfect a plan for immediate reorganization. Orrin G. Wood, chairman of the bondholders' protective committee, said that the several committees are agreed on the broad outline of the plan, but he added that there are still many details to be settled before it may be promulgated. The legal aspects of the proposal will have to be studied carefully.

The nature of the reorganization plan was not revealed by Mr. Wood since it is yet to be completed, but it was learned from other sources that its objective will be to offer some return on their investment to the stockholders as well as the note and bondholders.

Tire Inventories Gain Slightly as October Output Exceeds Shipments

PRODUCTION of pneumatic casings by domestic manufacturers in the month of October exceeded shipments for the first time in four months, resulting in a slight increase in stocks on hand. Actual production, however, was the lowest for any month of this year at 2,973,755 units and represented a decrease of 6.2 per cent as compared with September, and 17 per cent below October, 1930.

Shipments of pneumatic casings in October totaled 2,851,653, a decline of 27.5 per cent under September this year as compared with the average seasonal decrease of 13.1 per cent, and 18.5 per cent below October of last year. October shipments were the smallest for any month since March, 1922.

Pneumatic casings on hand October 31 amounted to 8,300,065 units, an increase of 1.7 per cent over the September figure of 8,158,453 units, and 17 per cent below October 31, 1930.

The same situation occurred in the case of inner tubes. During the month of October there were 3,076,972 inner

Scanning the Headlines

More definite restriction efforts boost the price of crude rubber nearly a cent . . . . INDIA *reports half-million operating profit . . . . November rubber consumption the lowest for that month since* 1923, *although higher than October . . . .* FISK *acquisition denied by Firestone . . . . October tire shipments the lowest for any month since* 1922 . . . . RUBBER REGENERATING *is merged with the Naugatuck Chemical Company . . . . Rubber chemists enjoy New York Group Xmas party . . . .* TRUMP BROTHERS *is placed in receivership . . . . New Jersey rubber manufacturers elect officers . . . .* CANTON RUBBER *plans English branch factory . . . . Canadian trade urges Vancouver as Dominion rubber port . . . .* GENERAL *introduces new Jumbo tire with "triangular" cross-section . . . . Golf ball weight limit is increased again . . . .* PIONEER *is erecting new factory building . . . . Christmas parties at rubber factories . . . . Stock issues drop to new low levels.*

tubes produced and 2,813,117 tubes shipped, leaving a stock in manufacturers' hands of 8,321,141 inner tubes. Solid and cushion tire shipments exceeded output for the twentieth consecutive month, bringing inventories down still lower.

The tire industry is estimated to have consumed a total of 35,464,946 pounds of crude rubber and 10,578,749 pounds of cotton fabric during the month of October in the manufacture of all types of tires and tubes.

These estimates of the Rubber Manufacturers Association, Inc., are based on reports furnished by manufacturers who produce approximately 80 per cent of the total for the United States, but have been adjusted to represent 100 per cent in the figures quoted above.

India Tire & Rubber Company Report Shows Operating Profit of $505,952

OPERATING profits of $505,952 were reported by the India Tire & Rubber Company for the ten months ended October 31, 1931, with the net income understood to be roughly half that figure. For the full year of 1930 the company showed an operating profit of $18,887 and for 1929 an operating profit of $300,078 with a net profit of $80,967.

Sales of the company for the ten months were $3,665,299, exceeding the total for the full year of 1930 of $3,650,741. Production increases are scheduled for early in 1932, with the company's line being expanded by the addition of a new line of batteries and a new line of tires to compete with mail order brands.

The company has changed its fiscal year to October 31 instead of December 31, necessitating the current report for only a ten-month period. Stockholders at their annual meeting on December 8 voted to change the 83,651½ common shares from a par basis to a no-par valuation and to reduce the capital structure from $1,075,272 to $458,277. This wipes out the company's deficit and places it in position to resume dividend payments on the preferred stock, on which no disbursements have been made for two years.

"In spite of the much talked of depression, India's percentage of gross profit is appreciably greater than last year," stated W. G. Klauss, president. "This increase ranges from 30.2 per cent to 34.8 per cent greater."

The report shows that 523 contract dealers have been added to the company's world-wide organization. With the addition of associate dealers, this doubles the company's independent dealer outlets in key cities.

"The new dealers together with the old ones," said Mr. Klauss, "have enabled the company to show an increase in domestic unit sales of more than 100 per cent. Nothwithstanding the recent reduction in prices, India's position in raw materials and increased factory efficiency will allow an even greater profit for 1932.

"In order better to enable India dealers to compete with mail order houses, the company is announcing a complete new line of tires. The new line of batteries will enable our dealers to supply commercial accounts with an additional service and give them a seasonal item to merchandise during the fall and winter seasons."

Officers and directors of the company were reelected by the stockholders. Officers are W. G. Klauss, president; George W. Merz, vice-president; Sterling W. Alderfer, secretary; Lester V. Baker, treasurer, and John T. Fisher, comptroller and assistant treasurer. Directors are Philip R. Mather, J. Andre, T. E. Borton, H. Lloyd Williams and the officers.

The ratio of assets and liabilities in the company's balance sheet as of October 31 is said to show a ratio of three to one. Disregarding inventories, cash and accounts receivable are $650,000 in excess of the company's current liabilities.

Rubber Regenerating Company Absorbed Into the Naugatuck Chemical Company

THE Rubber Regenerating Company, for years the rubber reclaiming subsidiary of the United States Rubber Company, is to be absorbed by the Naugatuck Chemical Company, also a U. S. subsidiary, effective January 1. After that date all matters pertaining to the manufacture and sale of reclaimed rubber and allied products will be handled under the name of the Naugatuck Chemical Company from its offices at 1790 Broadway, New York City.

Coincident with the consolidation of the companies, the rubber reclaiming plant until now maintained by the Rubber Regenerating Company at Mishawaka, Ind., will be closed down. The manufacture of reclaim after December 31 will be concentrated at the factory at Naugatuck, Conn.

The management of the enlarged Naugatuck Chemical Company will be under the direction of Elmer Roberts, president. Production will be under John P. Coe, factory manager, who will have as his assistants John Caskey, assistant factory manager, Philip Rice, superintendent of the chemical department, and Donald McCollum, superintendent of the reclaim department. Research and development will be under the direction of M. G. Shepard, chief chemist.

Sales will be under the direction of E. B. Curtis, vice-president. The sales of latex, Lotol and dispersions will be directed by Dr. M. C. Teague who will have an experienced and competent staff of assistants. The sales of heavy chemicals will be under Dr. William Valentine and the sales of plastics, varnishes and aromatics under G. P. F. Smith. Direct contact with the rubber goods manufacturers on chemicals, reclaim, etc., will be continued by R. E. Casey, W. O. Hamister, E. H. Nahm and G. C. Follett.

The Rubber Regenerating Company was incorporated in 1900, and the Naugatuck Chemical Company was established in 1904.

November Consumption of 22,943 Tons Shows 3 Per Cent Gain Over October

CONSUMPTION of crude rubber by manufacturers in the United States for the month of November, although the lowest for that month since 1923, shows an increase of 3.0 per cent as compared with October and a usual seasonal decline of 8.8 per cent. November consumption is estimated to have been 22,943 long tons as compared with 22,277 long tons for October and 23,479 long tons for November, 1930, according to statistics released by the Rubber Manufacturers Association. Total consumption for the first eleven months of 1931 was 326,259 long tons as against 350,307 long tons in the same period last year.

Imports of crude rubber for November amounted to 43,733 long tons, an increase of 5.6 per cent over the October figure of 41,395 long tons, and 37.7 per cent above November, 1930, according to the association's own estimates.

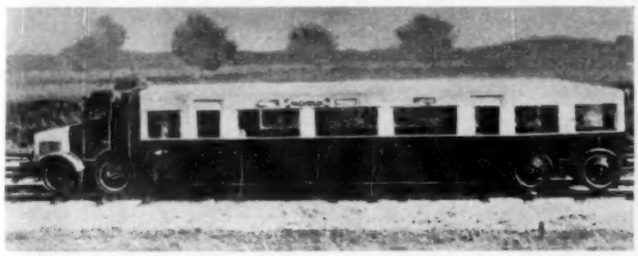
The association estimates total domestic stocks of crude rubber on hand November 30, at 292,493 long tons, an

increase of 7.0 per cent over October and 54.0 per cent over November 30, 1930.

Crude rubber afloat for the United States ports on November 30 is estimated at 77,443 long tons as against 68,427 long tons on October 31 and 52,538 long tons on November 30, 1930. Total visible stocks on hand and afloat to this country, therefore, rose to the record total of 369,936 long tons, practically equal to the country's 1930 consumption and well above the total consumption expected for the full year of 1931.

Rubber-Tired Railway Coach Is To Be Shown in United States by Michelin

A 24-passenger railway coach, powered with an automobile motor and equipped with rubber tires by Michelin & Cie., was scheduled to be brought into this country December 24 by the French liner De Grasse for exhibition to American railway officials. This is the



Rubber-tired railroad passenger coach of the type Michelin will show in this country

type of passenger coach which the Michelin company has developed in France and put into service successfully on several short-run branch lines.

Hailed by M. Raoul Dautry, director general of the French State Railways and vice president of the French Steamship Line, as "not merely an evolution but a revolution" in transportation, the first of these light and economical, self-propelled cars will arrive soon in New York on the French liner *De Grasse*. The experiments conducted by the French State Railways were described in THE RUBBER AGE of August 10, 1931.

Announcement to this effect was made a few days ago upon the arrival on the *Ile de France* of Jules Hauvette-Michelin, vice-president of the Michelin Tire Company, which is sponsoring the invention. He states that the Michelin Company intends to introduce the new form of transportation into the United States through the E. G. Budd Manufacturing Company, Phila., Pa., acting as agents.

Professor Georges F. Doriot, professor of industrial organization of the Harvard School of Business Administration, recently returned from a visit to France, said:

"The new autorail cars, equipped with pneumatic-tired wheels, are a genuine sensation in European transportation circles. The new car is the last word in comfort—and it is noiseless. The rubber tires makes it possible for the car to speed sixty miles an hour and more without danger of derailment, in spite of its light weight, and in addition the new tire is so constructed that it cannot flatten out even when punctured. This equipment makes possible the reduction in the horsepower needed, less time consumed in starting and stopping, higher speeds with more safety and a tremendous reduction in the dead load which has been such a factor in the high costs of transportation.

"The theory, really no longer a theory, was to provide frequent service under the most comfortable conditions, especially for short lines, without the necessity of maintaining the usual heavy equipment."

Trump Brothers Rubber Company Is Placed in the Hands of a Receiver

MANAGEMENT of the Trump Brothers Rubber Company, makers of tires, golf balls, gloves and mechanical rubber goods at Akron, O., was placed in the hands of Paul C. Weick, Akron attorney, as receiver on December 9. The receivership petition was granted by Judge Arthur W. Doyle in common pleas court at Akron.

This action was requested by Ross M. Trump, owner of 2,389 shares of the 3,760 shares of outstanding capital stock, and by E. H. Trump, holder of 227 shares. In filing the petition through their attorney, Willis Bacon, the Trumps said that the rubber company's "assets are substantially in excess of liabilities," but because of adverse business conditions it had been considered advisable to dissolve the firm.

Judge Doyle on December 12 named as appraisers for the Trump Brothers Rubber Company plant and equipment Samuel F. Miller, of the Mohawk Rubber Company, Russell B. Koontz, former president and general manager of the Adamson Machine Company, and Russell Farley, rubber chemist and fabric department head.

The Trump Brothers Rubber Company was incorporated in 1923 with a capital of $200,000 and had an annual capacity of 250,000 tires. Officers of the company are Elno H. Trump, president; F. G. Alderfer, Sr., first vice-president; A. H. Trump, second vice-president; W. R. Fitzgerald, secretary; and R. M. Trump, treasurer.

Efforts are reported being made to find a purchaser for the plant who will continue to operate it. Products of the company, in addition to tires, include household mats, automobile mats, golf balls, "Willisite" carpet, putting greens material, gloves, belts, household and office specialties, and mechanical rubber goods.

Price of Crude Rubber Rises Sharply As Restriction Agreement Is Rumored

MORE definite reports from the conference of British and Dutch producing interests caused a sharp rally in the prices quoted for crude rubber at New York on December 18 and 19. The entire matter has been kept in confidence, but newspaper reports stated that negotiations have been proceeding on a serious basis and that favorable results are likely before Christmas, presumably on a restriction basis of from 40 to 50 per cent.

The New York outside market price, which had sunk to a record low of 4¼ cents on December 8 and had risen to 4½ cents by December 17, suddenly jumped to 4¾ cents on December 18 and to 5⅛ cents on the following day. Rubber Exchange contracts, which had sold as low as 4.16 cents for the current month, rose to a nominal price of 5.00 cents on December 19.

The Rubber Exchange of New York had one of its most active short Saturday sessions on December 19, sales amounting to 1,962½ long tons, as compared with 792½ long tons for the previous day's full session. Trade shorts rushed to cover on the rise, and new speculative buying, despite the fact that offerings came from commission houses, added buoyancy to the list and contributed greatly to the volume.

(Other news of the industry will be found on Pages 271-275)

JAMES W. WHITEHEAD

WHITEHEAD *Discusses the Industry's Problems*

President of Norwalk Explains How His Company Has Met the Depression—Blames Conditions Largely on Over Expansion in Plant Capacities and Fluctuations in Rubber Prices

By JAMES W. WHITEHEAD
President, Norwalk Tire & Rubber Company

THE general depression, which all branches of industry experienced during the latter part of 1929, was not new to the rubber world. This industry has been in a fight for existence since 1921 as can be determined from figures which I submit herewith. In 1919-1920, in the United States, there were 225 plants manufacturing tires; today there are 26. It is now estimated that there is approximately $1,000,000,000 invested in rubber manufacturing plants. During the past ten years sales have amounted to approximately $9,000,000,000 dividends paid to stockholders over that period amounted to less than 2 per cent on turnover. The industry has been forced to contribute $200,000,000 of new capital to fill up the gap created through constant losses.

Our two foremost problems are:

First—Over-expansion in plant capacity. Today the domestic industry has a capacity to build 125,000,000 tire units per year. Replacement sales have been cut down from a peak of 52,000,000 to 35,000,000 due mostly to longer tire mileage. Tires for original equipment were approximately 60 per cent of the average requirements for this purpose during the past ten years and this business, I might add, it was authentically stated by the president of the Rubber Association at their annual meeting in January, 1930, is being taken at prices that are less than the actual cost of manufacturing. The total unit requirements of the United States today, including original equipment and replacement, is somewhere in the neighborhood of 52,000,000. Therefore, as you can readily see, the capacity to build is double the requirements. This condition has shown no improvement over the past ten years yet manufacturers, (I refer particularly to the large plants), have striven through high-pressure salesmanship to increase their quota every year. For some reason, which I will not even attempt to determine, dollar and cent sales seem to be of very much greater interest than profit in the industry.

Second—Fluctuation in price of crude materials. During 1925-1931 the price of rubber ranged from $1.13 to $.04½.

Tire prices to the user are from 7½ to 9 times lower today than in 1919. Notwithstanding there is from $800,000,000 to $900,000,000 worth of rubber manufactured and sold per annum. There are probably not more than three or four manufacturers of automobile tires paying a dividend on their preferred stocks.

I have been personally associated with the Norwalk company since its inception in 1914 in various capacities. My first job was bookkeeper. I was elected president in 1928. Not until then did I really have anything like a general understanding of the chaotic condition existing in the rubber industry. We decided very shortly thereafter to cut loose from all precedent as far as manufacturing and selling were concerned. Our first shot was to manufacture and sell direct to independent dealers on a 'cost-plus' basis, which enabled us to make a tremendous reduction in the cost of distribution but did not improve our position from the standpoint of actual sales. About the middle of 1930 we worked out a plan to confine our efforts almost exclusively to distribution in New England and that part of the states of New York and New Jersey to which we could make overnight deliveries and fixed a definite retail price on our tires throughout the entire territory, eliminating the old practice, (which still exists on 95 per cent of the tires sold in this country), whereby a list price is set so high that the ultimate user is placed in the position of jockeying for price whenever he buys.

We formed an association of well financed, independent tire dealers, which gives to each the purchasing power of several millions of dollars. Through this plan we have been able to cut our distribution cost in round figures from $800,000 to less than $200,000 per year. In the telephone we found an asset which for years we had overlooked; it is much less costly to pick up the telephone and talk with our dealer in any part of the country, and thus maintain a weekly contact, than it is to employ salesmen to do the job.

For the fiscal year ending September 30, 1931, our sales showed a unit increase of 88 per cent in tires and better than 100 per cent in tubes over the same period last year as against an industry increase of less than 2½ per cent. We were able to turn our red figures, which we had grown quite accustomed to looking at over the past ten years, to what we consider a very favorable black figure.

In our opinion, speaking from our industry standpoint, but with the feeling that the same applies to other industries, the past is no guide to the future. Forward plans should be formulated for the year on a survey of the conditions with which we are here and now confronted.

RUBBER—*and the Army's Requirements in the Event of War**

War Department Estimates That Quantity Required During First Year of a National Emergency, Based on Present Mobilization Plans, Would Approximate 60,000 Tons — 5,000,000 Casings Would Be Necessary

THE realization of the importance of rubber in the commercial world prepares us for the essential part it must necessarily play in military operations, where the lives of the men and their success in battle depend, to a great extent, upon the efficiency of the equipment used. Many other things besides the rifle and bayonet are required in modern warfare. Transportation plays a most important part in both offensive and defensive operations and the motor-driven vehicle is of the utmost importance in this phase. Consequently, the lack of sufficient rubber to meet tire and tube requirements for the vast number of motor vehicles assigned to an Army would create a serious condition, placing the troops at a disadvantage when employed against an enemy efficiently equipped.

Germany's experience in the World War, when her supply was exhausted, is a matter of history. The cumbersome substitutes used in place of rubber tires slowed down the transportation system to such an extent as to weaken both her offensive and defensive operations. It is interesting to note the voyage of the submarine Deutschland to this country shortly before our entry into the war, in comparison to the voyage of Columbus more than four hundred years before. Columbus was seeking gold, but Germany did not send the Deutschland here for gold. What that government wanted more than gold was rubber. No matter how abundant gold may have been it could not be used as a substitute for the much needed rubber, so when the Deutschland made the return voyage to Germany, rubber formed the principal part of her cargo.

During the World War the Army purchased for its own use, 275,000 motor vehicles of various kinds and over 2,500,000 assorted tires and tubes. Most of this equipment was shipped abroad to the American Expeditionary Forces.

In addition to the use of rubber in motor transportation, we have its use in waterproof clothing and rubber footwear. These articles are more necessary in the Army than in civil life. The duties of a soldier, especially in war-time, keep him in the open in all sorts of weather. Life in the trenches in Europe during the World War would have been considerably worse than it was but for the protection offered by rubber clothing and rubber footwear. Rubber indeed was and is highly essential to the health of the Army. In addition to the articles mentioned above, rubber is required by the Army for many other purposes, some of which play a most important part in military operations. We use practically all the articles made of rubber that are used in civil life, and in addition, thereto, certain articles of a strictly military nature, such as gas masks and ordinance equipment of various kinds.

Army Requirements

In time of peace no specific plan is necessary to assure an adequate supply of rubber for the Army. The consumption of rubber for our peace-time Army is infinitesimal when compared with the consumption for commercial purposes and our needs can be met from normal stocks. But the estimated quantity required during the first year of a National Emergency, based on present mobilization plans is approximately 135,000,000 pounds, approximately 60,000 tons, and plans are necessary to assure the availability of such a quantity.

Salvage Dump of the 26th Division in France During the War

The above estimate, broken down by War Department Branches, for major items is as follows:

QUARTERMASTER CORPS

Article	*Rubber Requirements in Pounds*
Bags, musette	17,542
Bags, water, sterilizing	78,634
Boots, rubber, hip	6,248,414
Boots, rubber, short, heavy	620,725
Combs, hard rubber	113,998
Overshoes, Arctic	1,538,286
Raincoats, Officers' (Sales)	368,764
Elec. insulation, fire hose, gaskets, valves, packing	713,334
Garden hose	363,409
Stationery items	230,099
Solid tires	1,250,000
Radiator hose, wire insulation, etc.	823,455
Cases and tubes	94,486,650

*Abstracted and reprinted with permission of *The Quartermaster Review*, Nov.-Dec. 1931 from an article originally prepared from data and plans on file in the Office of the Quartermaster General of the Army.

Air Corps	
Airplanes	124,600
Airships	421,200
Balloons	1,079,400
Engines	72,240
Cases and tubes	1,510,110
Chemical Warfare Service	
Face blanks	3,864,000
Hose	5,154,000
Lens washers	264,000
Deflectors	270,000
Rubber cement	162,000
Tape, adhesive and fabric	198,000
Engineers	
Belting	166,440
Cars	479,100
Hose	848,520
Locomotives	278,400
Packing, sheet rubber	135,000
Ordnance	
Tires	620,980
Signal Corps	
Wire and Cable	10,000,000

Included in the war-time estimate of Quartermaster supplies are the following articles: 4,212,700 pairs of boots; 5,000,000 automobile casings of assorted kinds and sizes; 4,500,000 tubes of various kinds. In addition 30,000 solid rubber tires will be required.

Rubber Substitutes and Reclaim

Although the gross requirements for the first twelve months of the mobilization are based on approved specifications, it is estimated that by the use of substitutes and eliminations, where possible, this amount can be reduced approximately 7%. The most important uses of rubber for which substitutes are doubtful, include the following:

(1) Tires and tubes
(2) Machine parts
(3) Surgical articles
(4) Boots and shoes
(5) Rubberized fabrics for balloons and air ships
(6) Insulation
(7) Fire hose
(8) Diving apparatus

Inasmuch as rubber is of the utmost importance to military operations, let us consider what our national resources would be in the event of an emergency. In crude rubber these are practically nil. In reclaimed rubber a complete plan for the 100% reclamation of rubber articles that are to be discarded because of their worn condition must be prepared. Should the sea channels be closed to us, thereby preventing importations of crude rubber, the following sources to meet the situation will be available.

(a) Stocks of crude rubber on hand at the time that importations cease.
(b) Stocks of reclaimed rubber and the 100% salvaging of worn out rubber articles.
(c) Limitations of the use of rubber in all articles of a non-essential character, and in all articles where substitution of other materials is possible.
(d) Increasing the life of certain rubber articles by the introduction of other substances such as carbon black.

With reference to (a) above, stocks of rubber during the past two years have averaged around 275,000 tons. Should such large stocks be on hand upon our entry into a war it will materially assist in providing a large part of the necessary rubber during the first year of mobilization. With reference to (b), a considerable amount of reclaimed rubber is used during peace-time in place of crude rubber. The amount used depends to a large extent upon the market price of rubber. The average stocks on hand during the past two or three years were 15,000 tons, and should such an amount be available when our supply of crude rubber is interrupted, it will assist to some extent in meeting the rubber requirements. It is assumed that a comprehensive plan for the recovery of as much rubber as possible will assist materially in helping out the situation. With reference to (c) above, rubber should be conserved for the most important purposes, and its use in non-essential items or in any articles that will permit the use of substitutes must be prohibited. How far this prohibition would extend will be determined by the availability of the supply of crude rubber. With reference to (d), carbon black, the soot of natural gas, was first introduced into rubber composition for the purpose of imparting a dark color, but it was soon discovered that far more important was the toughening of the rubber to the extent that a mileage of 30,000 for tires was made possible. Carbon black is produced in unlimited quantities in this country.

Possible Use of Synthetic Rubber

Among the possibilities for crude rubber substitutes is synthetic rubber. Since the World War and due to conditions experienced by nations engaged in the war, especially Germany, there has been a tendency for the scientific mind to turn to the development of synthetic rubber, and to this end, laboratory experiments have been successfully carried on within our own borders. If there should be an unwarranted rise in the price of natural rubber, at any time in the future, regardless of the conditions bringing about such a rise, strong interest in the United States and abroad will be found ready to begin at once the manufacture on a large scale of a synthetic rubber at a moderate price, and available for the major needs of the factories.

The possibilities of developing a home supply of crude rubber are being studied and experiments that may prove of value at some future time are now being carried on at various places.

Tolerance of rubber trees to frost and cold weather in southern Florida was practically demonstrated for the Hevea and several other tropical trees during the repeated cold periods, and a minimum temperature of 28 deg. F. experienced in the winter of 1927-28. The Department of Agriculture has expended $140,000 during the past few years in considering the feasibility of producing rubber from Hevea trees in Florida, the Canal Zone, Central America, and the West Indies. The 1931 appropriation bill includes $20,000 for the same purpose.

The cultivation of the guayule plant (Parthenium argentatum) is one of the possibilities of producing rubber in the United States that is now receiving attention.

Sources of Supply Carefully Studied

To a nation that consumes such a tremendous amount of rubber annually as we do, it is encouraging and comforting to know that experiments, looking toward the possibilities of supplying our needs in time of emergency, when importation of crude rubber from the East Indies is doubtful, are being carried on. By conservation, limitations in the use of rubber where other substitutes are possible, and by developing home-grown and synthetic rubber we will be in a position to successfully meet any situation that may arise should crude rubber imports suddenly cease.

The War Planning and Training Branch of The Office of The Quartermaster General is keeping abreast of all developments bearing on our supply of rubber. Plans for meeting our rubber requirements in the event of war are being constantly prepared and revised and this most valuable data will be available for use by the government should it ever be needed.

New York Rubber Group Holds Annual CHRISTMAS PARTY

Technical Paper Presented on Latex Applications—John P. Coe Elected Chairman for 1932 — Balance of Evening Given Over to Entertainment—Over 210 Attend Meeting

ONE of the most enthusiastic and best attended meetings of the New York Group of the Rubber Division, A. C. S., was held on the evening of December 16, in the club rooms of the Building Trades Employers Association, 2 Park Avenue, and took on the holiday spirit of a "Christmas Party." Plates were laid at the dinner which preceded the meeting for 210 members and guests.

Aside from the presentation of one excellently prepared technical paper dealing with the commercial applications of latex, a few general remarks by Cyrus S. Ching, director of industrial and public relations of the United States Rubber Company, and the election of officers for the ensuing year, the evening was given over to entertainment and jovial holiday fun. A gayly decorated Christmas tree, massed around by many attractive and useful presents, added the final touch to the holiday spirit.

The excellently served dinner, which incidentally also savoured of the spirit of the evening, including turkey and its trimmings and appropriate Christmas table decorations, was enlivened by a humorous skit, performed by John M. Qualen, one of the stars in a leading Broadway success, "Counsellor-at-Law," and a member of the cast of the stage and screen success, "Street Scene."

Following the dinner the technical paper of the evening, entitled "Latex and Its Industrial Application," under a joint authorship of J. B. Crockett and J. Edwardes, of the Hexeatex Corporation, was read by the latter. The paper was divided into two parts, the first part technical in nature and the second elaborating upon the practical applications of latex. Several samples of materials showing the direct application of latex to paper, fabrics, etc., were also exhibited. A complete abstract of the paper will be found at the end of this article.

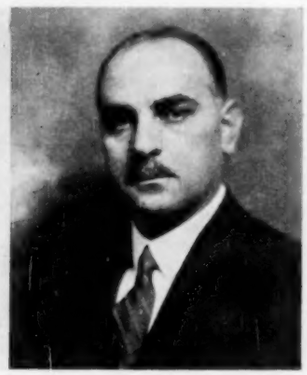
Election of Officers

The election of officers for the ensuing year followed, resulting in the unanimous choice of John P. Coe, of Naugatuck Chemical Company, as chairman and Peter P. Pinto, of THE RUBBER AGE, as secretary-treasurer. An executive committee to assist the officers will be announced shortly.

Cyrus S. Ching followed with a more or less humorous talk on the general situation within the rubber industry but seriously urged that the pessimism over the economic depression be discounted and a new start made in industry on the basis of the present conditions.

Two short reels of motion pictures were shown and thoroughly enjoyed by the gathering. Several musical numbers were also rendered by Argo, a well-known concert pianist. Walter Grote, with his 120-year-old violin was enthusiastically applauded in his renditions of the famous intermezzo from "Cavalliera Rusticana" and the "Souvenir" by Drdla. No New York Group meeting is complete without some demonstration of Walter's "black magic" and as a consequence he was also called upon to perform several sensational sleight-of-hand tricks.

JOHN P. COE



PETER P. PINTO

"Professor" Al Baker, the popular entertainer, came next with his humorous dialogues and feats of ventriloquism. Mr. Baker, who has entertained before the Group at previous meetings, brought an entire new bag-full of tricks for this occasion.

Number of Amusing Contests

As a feature of the evening which was introduced by the entertainment committee the brawn and mental capacity of the members were tested in a series of contests consisting of an inner tube blowing contest, a questionnaire covering queries of general news and interest and one calling for the classification and names of the manufacturers of various rubber chemicals, the trade names of which all ended in "X." The questionnaires were filled out during the dinner.

In the tube blowing contest the three entrants worked strenuously over the air pumps until "Dave" Scott's tube exploded (via a pen-knife). At the expiration of the allotted five minutes there was no question but that J. E. Skane, of Raybestos-Manhattan had won the prize,—a novelty cocktail shaker containing cigars.

On the "X" questionnaire contest, two contestants tied for first place, M. H. Savage and E. W. Schwartz, both of General Electric Company. On the draw, however, Mr. Schwartz won the prize,—a brief case. The second prize which went to Mr. Savage was a pocket slide rule. C. R.

Boggs, of Simplex Wire and Cable Company took the third prize consisting of a flashlight. On the "general information" questionnaire, first honors were taken by D. A. Shirk, of Rare Metal Products Company, and consisted of a box of golf balls. There was a triple tie for second prize, which was won on the draw by F. C. Schmelkes, of Wallace and Tiernan Company, and was a bridge ash-tray set.

The final feature of the evening was the drawing of the Christmas presents. Through the generous contributions of various companies connected with the industry 69 presents were available for distribution. Among the particularly attractive presents contributed were Gladstone bags, an electric clock, pipes, camera, wrist watch, and electric night lights.

A vote of thanks was accorded the retiring officers and the entertainment committee, and a very entertaining evening had come to an end.

The entertainment committee which had been responsible for so pleasant an occasion was comprised of John M. Ball, of R. T. Vanderbilt Company; Donald F. Cranor, Binney and Smith Company; W. L. Sturtevant, Raybestos-Manhattan, Inc.; and Peter P. Pinto, THE RUBBER AGE.

The donations of cash and presents for the prizes in the contests and lottery, which added so much to the success of the evening, were given by the concerns listed below, to whom the Entertainment Committee is indebted for their liberal support.

The following made cash contributions: Carter Bell Mfg. Co., Curran & Barry, General Atlas Carbon Co., Henry L. Scott Co., and Southwark Mfg. Co.

Contributions of gifts for prizes were made by the following: American Cyanamid Company, Binney & Smith Company, Callaway Mills, E. I. du Pont de Nemours & Company, Eagle Picher Lead Company, Essex Rubber Company, W. O. Hamister, *India Rubber World*, Naugatuck Chemical Company, New Jersey Zinc Company, Philadelphia Rubber Works Company, Revertex Corporation of America, THE RUBBER AGE, U. S. Rubber Reclaiming Company, R. T. Vanderbilt Company.

ABSTRACT OF PAPER

Latex and Its Industrial Application

By J. B. CROCKETT AND J. EDWARDES

THE paper referred to the character and nature of latex and the researches and publications since about 1906 and pointed out the different characteristics of fresh as compared with preserved latex.

It was noted that if you succeed in carrying out a certain experiment with preserved latex with the view to applying the result of the treatment to fresh latex, it is almost a foregone conclusion that the results will be disappointing. Hauser's work on the structure of the rubber globule was noted and the work of Pummerer in preparing a protein-free rubber was referred to. In spite of the progress that has been made in recent years in colloid chemistry and the intensive research that has been applied to latex in particular, no one yet has produced a satisfactory explanation of coagulation which covers all the observed facts.

Comment was made on the various theories which have been put forward. A recent observation by Twiss was reviewed at some length. Generally the proportion of sulphur used in latex mixes is never more than three per cent on the dry rubber. If we assume an average diameter of .001 mm. for the latex globule and .01 for the sulphur particle, there will be, according to Twiss, roughly 30,000 rubber globules to each sulphur particle. The writer's calculation was that there would be 60,000 rubber globules to each sulphur particle.

How can we explain the mechanism of uniform vulcanization which invariably takes place in such a mixture? Does the sulphur combine with only a few rubber particles which are uniformly distributed and while this might be understandable if the sulphur is in a molten state, namely above 114° C., in a process for the production of sponge rubber the latex containing sulphur is coagulated and the wet coagulent vulcanized in hot water. Here the sulphur is obviously trapped and is further insulated, so to speak, by the porous nature of the rubber, the voids being filled with water so that the sulphur is imprisoned in this wet coagulum and yet with ultra-accelerators a perfectly homogeneous vulcanisite is obtained below 114° C., namely, with the sulphur in a solid state.

No matter how interesting from a research and development standpoint, latex can only succeed in displacing crude rubber and the older methods where practical advantages are proven from a standpoint of cost or improved properties in the final product. To anyone familiar with compounding rubber, the compounding of latex should present very little difficulty when due regard is taken of the individual properties of the compounding materials in relation to their effect on the stability of the latex.

The effect of adding colloidal dispersions of fillers and reinforcing agents to latex and drying is not at all the same as milling them into rubber. Very little reinforcing or resistance to abrasion, for instance, are thus obtained, the fillers apparently being merely loosely distributed and trapped in the unmasticated rubber film. If, however, such a combination is put on a mill, it will in a remarkably short time assume all the characteristics of a milled rubber compound. This method was suggested for making master batches of carbon black, colors, fibre, leather, etc.

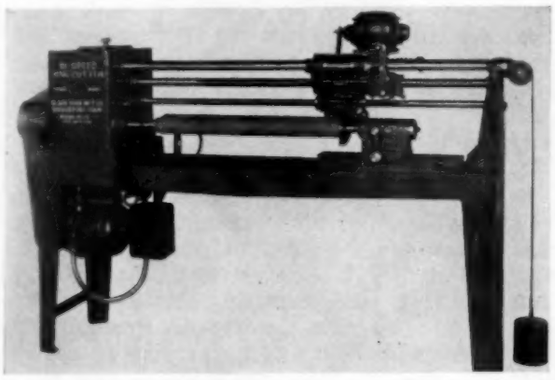
The great progress made in dipping and dipping methods in the last year and a half was referred to together with details of the the difficulties which had to be overcome and summarizing the advantages and disadvantages of the coagulation method is contrasted with straight dipping.

The use of automatic machinery in latex dipping with a description of one of the machines in successful use and the probability of the adaptation of such machinery to almost all types of dipped articles was discussed.

Impregnation and saturation processes were dwelt upon briefly and some new developments utilizing the spreading machine were described.

New Hi-Speed Ring Cutter

A NEW machine especially designed for extremely fast and accurate work in the production of jar rings and other similar gaskets is the latest development of the Black Rock Manufacturing Company, Bridgeport, Conn.



The machine is mounted on cast iron supports and is operated by two motors, one for driving the general mechanism and the other for driving the knife. The high speed gears run in oil and the shafts are mounted in almost all cases on ball-bearings. The width of the ring cut is determined by oscillating the work mandrel and its movement is timed to correspond with the lateral travel of the knife. Mandrels up to 40 inches long may be used as the tail stock is adjustably mounted. As shown in the accompanying photograph the carriage mechanism is inverted and suspended above the work and thus kept free from dust and water incidental to the cutting operations.

The machine is smooth running and is said to be capable of cutting lipped rings at not less than 200 per minute with a single knife. These time saving and automatic features of the device are of value. The carriage and the work mechanism automatically stop at the end of the cut, throwing back the knife so that the entire carriage is automatically returned to the starting position.

Tentative Standards Issued by A.S.T.M. for Various Rubber Products

Criticism Is Solicited on Proposed Specifications and Test Methods Before Final Adoption by the Society

THE American Society for Testing Materials has recently issued a number of "tentative standard" specifications for specific rubber products and "tentative standard test methods" for rubber goods. The idea of establishing "tentative" standard tests or specifications is to welcome criticism from the manufacturing industry or other interested parties before the final adoption of such standards by the Society. The tentative standard specifications for rubber pump valves and the tentative standard method of test for hardness of rubber are given below. Criticisms of these are solicited by the Society and should be addressed directly to Arthur W. Carpenter, secretary of Committee D-11, on Rubber Products, B. F. Goodrich Company, Akron, O.

Tentative Specifications for Rubber Pump Valves

A. S. T. M. Designation: D 151 — 31 *T*

1. These specifications cover the requirements for rubber valves for pumps equipped with grid-type seats and which are used for pumping liquids having very slight, if any, effect on rubber.

2. Rubber valves shall be furnished in three classes as specified, classification being made according to the service for which they are intended, as follows:

Class A.—Hard valves, for hot water at temperatures between 150 to 212° F. and at pressures between 200 and 300 lb. per sq. in.

Class B.—Medium valves, for water at temperatures less than 170° F. and at pressures between 50 and 200 lb. per sq. in.

Class C.—Soft valves, for water at temperatures less than 170° F. and at pressure less than 50 lb. per sq. in.

Manufacture

3. The valves shall consist of properly vulcanized rubber compound and the compound shall contain no rubber substitute of any kind, nor reclaimed rubber, and shall be free from all substances which might injuriously affect its quality.

Chemical Composition and Tests

4. The compound shall contain not less than the following percentages by volume of the best quality new wild or plantation rubber:

	Rubber, Minimum Per Cent by Volume
Class A, Hard	55
Class B, Medium	60
Class C, Soft	65

5. Chemical analysis of the compound shall be made in accordance with the Short Procedure described in Sections 1 to 13 of the Tentative Methods of Chemical Analysis of Rubber Products (A. S. T. M. Designation: D 297 — 31 T) of the American Society for Testing Materials.[1]

Physical Properties and Tests

6. (a) The valves shall conform to the following requirements as to hardness when tested in accordance with Paragraph (b):

	Hardness	
	Minimum	Maximum
Class A, Hard	0.03 mm.	0.15 mm.
Class B, Medium	0.50 mm.	0.75 mm.
Class C, Soft	0.80 mm.	1.05 mm.

(b) The hardness shall be measured by determining the depth of indentation in millimeters produced by a spherical surface 3.2 mm. (0.125 in.) in diameter under a dead-weight pressure of 1 kg. (2.2 lb.) applied for one minute. The test shall be made at a temperature not under 60° F. nor over 80° F.

7. Valves when cut in half and subjected to the following dry heat and steam tests shall not show any disintegration, blistering or other defects either on the surfaces or in the interior when cut open.

(a) *Dry Heat Test:* One-half valve shall be exposed to dry heat at 270° F. ± 5° F. for one hour.

(b) *Steam Test:* One-half valve shall be exposed to steam at 400° F. ± 5° F. for three hours, the steam pressure to be gradually reduced to atmospheric pressure at the end of the test.

8. For purposes of test, one valve representing each class shall be selected from each order.

9. The thickness shall be uniform throughout and the entire circumference shall be concentric with the hole at the center.

10. Tolerance of ± 1/32 in. in thickness and diameter shall be permissible.

11. Surfaces of all valves shall be smooth and free from pitting, blisters, air checks and other imperfections.

12. Each valve shall be branded on the edge with the name of the manufacturer, the month and year of manufacture and the word "hard," "medium" or "soft."

Inspection

13. (2) The purchaser may make the inspections and tests to govern the acceptance or rejection of the valves in his own laboratory or elsewhere, but such inspections and tests shall be made at the expense of the purchaser.

(b) If the inspections and tests are made at the place of manufacture, the manufacturer shall afford the inspector, without charge, all reasonable facilities to satisfy him that the valves are being furnished in accordance with these specifications. Such inspections and tests shall be so conducted as not to interfere unnecessarily with the operation of the works.

Tentative Method of Test for Hardness of Rubber

A. S. T. M. Designation: D 314 — 31 *T*

1. This method of test is intended for the more common grade of rubber such as tire treads, most automotive mechanical rubber parts, etc., but not for extremely hard or extremely soft rubbers which fall beyond the range of the instrument specified.

2. For the purpose of this test, the hardness of rubber shall be considered as that property by virtue of which the surface and adjoining layers resist indentation when subjected to a definite pressure by an indentation element of standard size, the contact surface of which conforms in shape to a portion of a true spherical surface.

3. The A. S. T. M. Hardness Number is the indentation in thousandths of an inch determined under definitely prescribed conditions.

4. The apparatus shall consist of a table for supporting the sample, an indentor acting under a dead-weight load, an annular pressure foot exerting a definite force on the surface of the sample surrounding the indentation area and a suitable device for indicating depth of indentation.

5. The table used to support the test piece shall possess a flat horizontal surface of minimum linear dimension of 2 in.

6. (a) The indentor shall consist of a rigid vertical shaft, the lower end of which is finished to a true hemisphere 3/32 in. ± 0.0005 in. in diameter. The maximum diameter of that portion of the

shaft passing through the pressure foot described in Section 7 shall not exceed that of the indentor point. The point shall be made of a highly-polished non-corrosive, hard metal properly treated to resist wear due to continuous use (a plated point is not satisfactory).

(b) The indentor shall be actuated by a freely acting dead-weight load of 3 lb. ± 0.25 oz. Less than 0.25 oz. shall be required to overcome friction and to produce perceptible motion of the penetrator when counter-balanced.

(c) The indentor shall act through the opening in the center of the pressure foot.

7. (2) The pressure foot shall be 5/8 in. ± 0.005 in. in diameter and shall have a hole 7/64 in. ± 0.005 in. in diameter located at the center. It shall be sufficiently thick to insure rigidity and the edges shall be rounded off with a radious 1/64 in. The inner surface of the pressure foot shall be parallel to and concentric with the surface of the shaft of the indentor. The contact surface of the pressure foot shall be at right angles to the inner surface, and shall be parallel to the table which supports the test specimen.

(b) The pressure foot shall be subjected to a freely acting load of 5 lb. ± 0.75 oz.

8. Vertical movement of the indentor shall actuate a suitable dial gauge graduated to show indentation in 0.001 in. The accuracy over the whole range shall be within ± 0.0005 in. indentation. The gauge shall be mounted so as to be rigid with the pressure foot. The indentation measured during the test will therefore be the distance between the contact surface of the pressure foot and the tip of the ball point of the indentor.

Procedure

Hardness Testing Standard:

9. When the instrument is used as a reference standard for the calibration of other types of hardness instruments or in arbitration tests, uniform test specimens at least ½ in. in thickness with parallel sides (slab form) shall be employed. The minimum laterial dimension of the specimen shall be 2 in.

10. (a) *Method.*—The pressure foot and indentor shall be lowered until contact is made with the test specimen. The points of indentation shall be at a minimum distance of ½ in. from the edge of the test specimen. The full load shall then be allowed to act immediately, without shock, on the indentor. Readings on the indentation dial shall be made exactly 30 seconds after the full load is applied.

(b) *Number of Readings.*—The test specimen shall be shifted to a new position after each contact in order to avoid errors due to fatigue effects. A minimum of five readings shall be made and their average taken as the hardness measurement excepting that no reading may differ by more than ± 0.002 in. from the mean value. Any readings known to be definitely in error shall be discarded.

(c) *Temperature.*—All tests to be truly comparative should be conducted at the same standard temperature which shall be recorded in every case. Test specimens shall be subjected to the standard test temperature a sufficient period of time prior to testing to insure temperature equilibrium as may be shown by constant indentation values.

(d) *A. S. T. M. Hardness Number.*—The average indentation value determined in accordance with Paragraphs (a) and (b) shall be expressed as a whole number, signifying thousandths of an inch indentation, and reported as the A. S. T. M. hardness number of the sample.

Routine Testing:

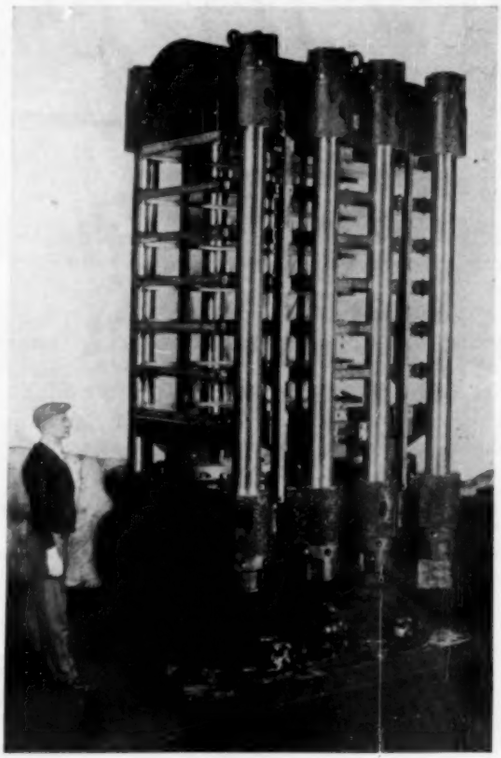
11. When the instrument is used for routine testing, satisfactory results may be secured by using specimens having dimensions other than those required in the procedure for standard tests, Section 8. In all cases the specimens tested shall for comparison be of essentially the same thickness and size. These results will be comparative only.

12. (a) *Method.*—The hardness shall be determined in accordance with Section 10 (a).

(b) *Number of Readings.*—A sufficient number of readings shall be taken to provide indentation values checking with ± 0.002 in.

Tandem Design Press

A NEW departure in rubber presses is the latest development by the Adamson Machine Company, Akron, O., of a tamden design vulcanizing press which can be also easily converted into two standard platen presses if desired. It is claimed that the pressure brought to bear in the new equipment is three times that obtained in the ordinary platen press. A general view of the press, which is 13 feet high, is shown in the accompanying photograph. This particular press was built for one of the well-



known manufacturers of molded rubber automobile parts.

Some of the outstanding features of the new machine are that the platens are drilled to afford uniform heating, the platen plugs are of bronze, all castings are of annealed steel except the cast iron ram which is hard chilled and the strain rods are high tension steel which are ground to give uniform diameter and the strain rod lugs have extra wide shoulder bearings. The maximum deflection of the press is .003 inches.

New G. E. Gasket Material

A NEW gasket material, moisture-proof, and highly oil-resistant, has been announced for sale by the General Electric Company. This material, known as No. 1000 Compound is recommended especially for applications where the primary purpose of the gasket is to exclude moisture, for which purpose it has been found superior to cork or other rubber compounds.

It is a white, odorless, sulphur-free rubber compound, available both in sheets and moulded shapes. It is extremely tough and strong, very flexible, requires no sticker, and can be used repeatedly in testing work, as well as in permanent joints. It is unaffected by exposure to the weather, and when under compression in properly-made joints it is not attacked by cold oil. In contact with hot oil it is practically unaffected where enclosed in recessed joints under compression, but is not generally recommended where resistance to hot oil is of prime importance. Mildly alkaline solutions, such as derived from Portland cement, or dilute acid solutions have no apparent effect.

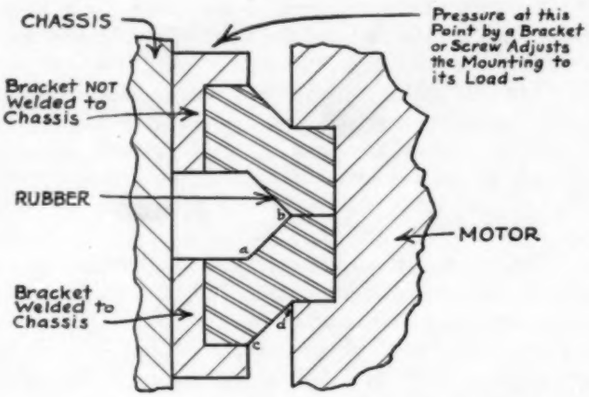
This material has been found especially useful in making joints in porcelain and metal assemblies, such as in dry-type bushings for outdoor transformers and oil circuit breakers.

New Design in
Rubber Motor Mountings

Adaption of Avery Railway Elastic Rubber Spring Now Offered for Use in Rubber Motor Mountings Without Bond to Metal

A NEW and simplified form of rubber motor mounting for automobile use has recently been developed by E. S. Avery, designing engineer and an authority on rubber-on-metal problems. This new mounting is the first adaptation in other fields of the elastic rubber spring for railway coaches which was described recently in these pages*, the main difference being that the railway spring used rubber welded to metal whereas in the new automobile engine mounting there is no bond between rubber and metal.

According to the designer, this mounting introduces into rubber a new movement, that of a parallelogram which can



AVERY RUBBER MOTOR MOUNTING
This cross-section view is a full size reproduction showing the method of application of the mounting and how the area under load is changed from a parallelogram to a rectangle of the same area

change its shape but does not result in any change in area. By this means there is no shearing or crushing action in the rubber, yet the mounting provides the necessary support and cushioning of the engine. In the accompanying cross-section illustration of the mounting, a, b, c, d is the angular area which under load is deformed from a parallelogram to a rectangle of the same cross-sectional area. There is no lateral pressure. The rubber offers very strong resistance to a change in shape under load thereby enabling the mounting to sustain heavy loads.

Motor mountings should not be subjected to any searing action, states Mr. Avery. By avoiding shear, the size of the mounting can be reduced to about a tenth of the size of any mounting which depends wholly on shear for its action. A bearing surface, as used in this mounting, will stand a load of 1,000 lbs. sq. in. which also makes possible a smaller size.

On account of the principle involved in the design of the mounting, it is stated that there is no lateral pressure and that movements in all directions are resisted—vertically as well as laterally. It is sturdy and durable and can be produced very economically.

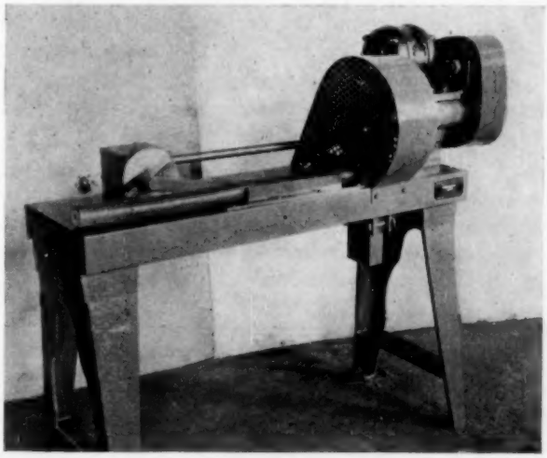
The illustration shows its method of application to the chassis and engine. To the chassis two housings or brackets are fastened, the lower one being rigid and the upper one being movably applied so that pressure on the rubber mounting can be adjusted to its load. The rubber mounting itself is split horizontally in the center to facilitate replacement if necessary. A groove, about one quarter inch deep, is cut in the engine wall, or a similar means is provided for holding the mounting. It is claimed that it is impossible for the rubber to shift out of position or for the motor to slip out of the supporting mounting.

*See "Elastic Rubber Springs for Railway Coaches," THE RUBBER AGE, Aug. 25, 1931, Page 404.

New Stock Cutting Machine

A NEW machine to measure and slice either raw or cured rubber stocks and accurately cut to pieces varying from very thin slices to those 6 inches in length is the latest development of Utility Manufacturing Company, Cudahy, Wisconsin. The cutter is made standard to take any shape stock from ¼" to 2½" cross section. Length of cut can be easily changed.

The speed is changed by a unique variable speed device giving a three to one range. The machine is geared to



Motor mountings should not be subjected to any shearing

slice from 100 to 300 cuts a minute, according to the length and the cut pieces are dropped into a tote box. The length of cut is easily changed by the operator.

The device consists of a motor driven disc knife with motor and connecting power transmission mounted on one end of the lathe bed. A shaft from the motor transmits motion to a gearing which operates a slotted disc crank.

EDITORIAL COMMENT

"Sitting Pretty" for the Upturn

AS the new year approaches it is but natural to look hopefully for some definite signs of betterment in the industrial world. It is somewhat of a strain on the vision to see anything straight ahead but there are indications that better times are "around the corner." The Conference of Statisticians in Industry, which meets every month under the auspices of the National Industrial Conference Board, found that although general business activity in November declined under the level of October, the rate of decline was less than that which has recently prevailed. The members of this conference represent over 10,000 business concerns.

The favorable signs noted by the statisticians were, that productive activity on the whole moved downward but the decline was considerably less than is usual at this time of year; that distribution between wholesaler and retailer decreased less than usual; that automobile production declined less than seasonally, partly compensating for the sharp decline in October; that production of steel moved upward sharply, running against average tendencies observed in recent years; and that cotton cloth production showed a 2 per cent increase in November though a 2.5 per cent decrease would have been seasonal, and the output in November was at a level 12 per cent greater than it was in November, 1930.

There is little in all this which ties up directly with the rubber industry, by way of consolation or encouragement, but even if but a slight improvement in conditions is sustained it cannot but react favorably to the rubber industry.

The most encouraging bit of consolation that can be drawn from the picture is that, if the heralded "better times" are "just around the corner," the rubber industry is "sitting pretty." The low prices of raw materials will permit of advantageous buying and it is even rumored that several rubber companies have already taken advantage of the present scale of record low prices to stock up with fabric, crude rubber and compounding materials. The reduced inventories of finished rubber goods in manufacturers' hands is also a healthy sign. The companies, for the most part have effected economies and retrenchments within their respective organizations, have cleared away the "dead wood" and, in many instances, have improved their capital structure.

The rubber industry is wisely cleaning house and will be prepared for the upward swing.

Confidence

THERE is unmistakable evidence that the country is enjoying a stronger feeling of confidence in the future since President Hoover presented his last group of messages to the new Congress on the subject of economic rehabilitation. It rests largely with the Congress whether that confidence is going to be shaken by procrastination and red tape.

Confidence must be sustained. It is the most important psychological factor in the economic situation today. We are too prone to give pessimistic news too great an importance and fail to judge the good value of optimistic news. Confidence means courage and courage of business men today to plan ahead more hopefully is sorely needed.

An interesting and new angle of thought in this connection was brought out recently by Cyrus Ching, director of industrial and public relations of the United States Rubber Company, at the meeting of the New York Rubber Group, A.C.S. He stressed the need of confidence in our American industrial structure, the necessity for business to forget the past and build up anew from present conditions. But the novel point which he brought out in his remarks was that confidence has been shaken much too frequently in the erroneous valuation of news of events, particularly world news. With the radio, the telegraph, the international news reels and paid propaganda, we are reading and seeing things which, though in themselves are disturbing, have been going on for decades. A bloodless revolution overthrows the government in the Argentine and immediately everyone doing business with Argentine gets panicky. Confidence in Argentine bonds is shattered. But revolutions have occurred there many times before and the wealth and trade possibilities of that country have grown steadily. His point was not to entirely discount foreign news as bearing on the economic situation but to regard it in proper proportion to its importance. Confidence can be so easily destroyed and is so difficult to rebuild.

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Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

U. S. NAUGATUCK UNITS CLOSE FOR XMAS RECESS

Sundries manufacturing departments of the United States Rubber Company at Naugatuck, Conn., were shut down December 18 and will not reopen until January 4. This marks the first time in a long period that the sundries units have been shut down, business in this division having been consistently good. Other units at Naugatuck have been closed for briefer Christmas period recesses.

Present plans call for shutting down the tennis mill on December 24 and 25 and January 1, it is reported. The regular ticket will be scheduled for the week beginning December 28.

In the waterproof departments the plant will be operated up to and including December 24. The schedule for the week beginning December 28 has not been determined as yet.

The sundries departments will be shut down on Friday, December 18 and will not reopen until Monday, January 4, 1932. After January 4 they will operate on a five-day basis on all varieties with the exception of molded goods, which will remain on a four-day basis as at present. Some special production may be handled during this shutdown period.

FIRESTONE DISCUSSES LIBERIA WITH CASTLE

Harvey S. Firestone, president of the Firestone Tire & Rubber Company, visited Washington, D. C., on December 10 to call on President Hoover and Under-Secretary of State Castle. With the latter he discussed the commission appointed to study conditions in Liberia under the auspices of the League of Nations. Mr. Firestone indicated in his conversation that he was desirous of having this government use strong measures to stabilize the Liberian government.

He did not discuss that country with President Hoover, however, but told the President of his observations of conditions in Europe, saying that he was optimistic.

Pennsylvania Safety School

The Pennsylvania Rubber Company is planning to establish a safety school in Jeannette, Pa., to be held on four consecutive Monday evenings. The school will be sponsored by the Western Division of the National Safety Council, and W. O. Rutherford, president of the company, has been elected general chairman.

Canton Plans English Plant

The Canton Rubber Company, manufacturer of household and factory rubber gloves at Canton, O., is planning the establishment of a factory for the production of these items in England. Leeds and Manchester are being considered as possible sites.

Goodyear Jumps Gadsden Output

The factory of the Goodyear Tire & Rubber Company at Gadsden, Ala., will resume full operations with a six-day week and produce 5,000 tires daily on the turn of the year. Operations are now four days a week with the labor shifts six hours daily. Current production is somewhat less than 4,000 tires a day.

Pioneer Rubber Adds Building

The Pioneer Rubber Company is erecting a new building, 40 by 60 feet in size, just north of its present factory buildings at Willard, O. The new structure will be used for storage and manufacturing purposes. It is unique in that it is being constructed out of cement blocks which the company is making from the cinders of its power plant at a minimum of cost.

Seiberling Sales Up 10%

Sales of tires in November, the first month of its fiscal year, were 10 per cent greater than in the corresponding month of 1930, the Seiberling Rubber Company announces. Company officials credit the gain to the introduction of the new line of "air-cooled" casings.

ORGANIC CHEMISTRY MEN TO HEAR RUBBER PAPERS

The Fourth Organic Chemistry Symposium will be held at the Sterling Chemistry Laboratory, Yale University, New Haven, Conn., from December 28 to 30. Two papers dealing directly with rubber technology will be presented, and others will touch indirectly on the chemistry of rubber.

W. H. Carothers, of E. I. du Pont de Nemours & Company, will speak at 2 P. M., December 28 on "Some Reactions of Vinylacetylene and the Synthetic Rubber Problem." He will be followed by Thomas Midgley, Jr., of the Ethyl Gasoline Corporation, who will discuss "The Structural Formula of Ebonite from the Pyrolysis Products."

RECORD ATTENDANCE AT MEA-NSPA TRADE SHOW

Approximately 10,000 persons attended the joint trade show of the Motor and Equipment Association and the National Standard Parts Association and the annual conventions of those organizations at the Municipal Auditorium, Atlantic City, N. J., between December 5 and 12. This year's gathering marked the end of the former group as a single body and its division into the Motor and Equipment Manufacturers Association and the Motor and Equipment Wholesalers Association.

The Allbestos Corporation, which showed its new rubber molded brake lining, was represented by a large group, headed by William G. Kitchen, president, and C. A. Grainger, general sales manager. The Baldwin Rubber Company delegates included Herman H. Gabelman, manager of the jobbing division, and the following representatives: Bert G. Cochrane, Irving M. Cochrane, W. M. A. Romans, Jr., E. L. Baker, J. F. Chapline, R. S. Staples, Wallace R. Lynn, P. H. Ebeling and W. F. Minnich.

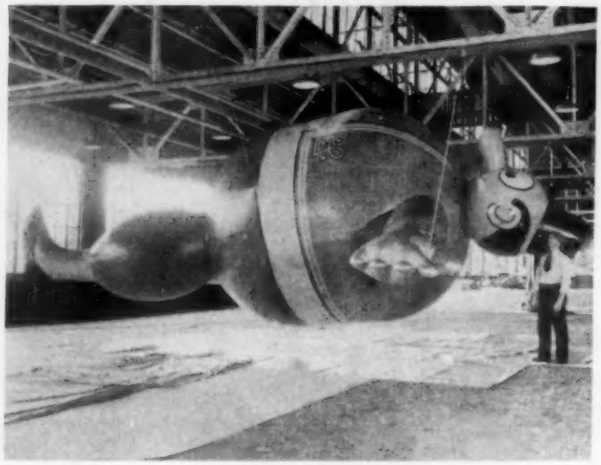
The Gates Rubber Company group included J. H. Crary, Jr., sales manager tire division; E. J. Tesdell, general manager accessories division; G. W. Liljestrom, sales manager accessories division; G. A. Leonard, manager brake lining division, and W. A. Caskie, field research director. The L. H. Gilmer Company delegation was headed by John S. Krauss, president, and Charles H. Bauer, general sales manager.

Matthew E. Hill, sales manager, headed the Holfast Rubber Company representatives. The Las-Stik Manufacturing Company sent a group led by L. C. Sohngen, president, and M. J. Spoerl, vice-president. The McKay Company, which showed its rubber tire chains, had a delegation headed by M. R. Peck and F. A. Bond, vice-presidents. The Packard Electric Company group was in charge of B. N. MacGregor, general sales manager.

A. Schrader's Son, Inc., was represented by a group headed by M. H. Tisne, accessory sales manager. Robert Lee, vice-president, directed the Thermoid Rubber Company group. Noah, Maxime and Felix Van Cleef headed the Van Cleef Brothers delegation.

HARRY E. BLYTHE, assistant to the president of the Goodrich Tire & Rubber Company, spoke on "Business and the Future" before the Akron Life Underwriters' Association at the Mayflower Hotel, Akron, O., on December 18.

Goodyear Balloons in Macy's Parade



ONCE again balloons built by the Goodyear Tire & Rubber Company were the feature of the annual Thanksgiving Day parade staged by R. H. Macy & Company, New York City department store. The 110-foot dragon shown at the left was one of the largest figure balloons ever constructed, as was the 55-foot-high two-headed giant, one foot higher than an 80,000 cubic foot racing balloon. The parade was again supervised by six Goodyear balloon experts, headed by J. F. Cooper. At the right one of the figures is shown in course of construction at the Goodyear factory.

RUBBER SURPLUS SEEN BY TRADE COMMISSIONER

The potential increase in the supply of crude rubber is so great that by 1935 the crop will be far in excess of demands, and the consequent low price will be of little benefit to rubber plantation owners or to workers on the plantations. That opinion was expressed by Don C. Bliss, United States trade commissioner at Singapore, in a talk December 4 before the members of the Akron Export Club.

"Rubber admittedly is in a rather serious predicament just now, with a heavy surplus of potential production weighing down the market," he declared. With regard to "non-producing" estates, he explained that while "resting" the trees increase their content of latex, with the consequent result that when latex is again gathered the production is greatly increased.

NATIONAL-ERIE FACTORY HAS RESUMED ACTIVITIES

The National-Erie Corporation, Erie, Pa., which resumed operations several weeks ago, has been increasing its sales and manufacturing activities steadily. The company is now soliciting business as heretofore and is prepared to handle any of its customers' requirements promptly and with products of the same quality of workmanship as in the past.

The National-Erie Corporation operates its own foundries and machine shops, heat treating plants and cut gear departments. Its steel foundries produce electric cast steel, and the company is in a position to furnish a complete line of rubber mills, hydraulic platen presses, tubers, strainers and insulators, Simplex patented quick opening doors and vulcanizers, as well as special machinery.

William L. Blodgett

William L. Blodgett, 69 years old, former secretary of the Hamilton Rubber Manufacturing Company, Trenton, N. J., died early this month at his home in Florida. He retired from the rubber company in 1917.

Edward J. Brown

Edward J. Brown, for many years a representative of the Acme Rubber Company, Trenton, N. J., died December 9 at his home in Lansdowne, Pa. Burial was at Trenton.

N. J. Manufacturers Meet

The annual meeting of the Rubber Manufacturers' Association of New Jersey was held December 8 at the Trenton Club, Trenton, N. J. The following officers were re-elected: President, John A. Lambert, president and general manager of the Acme Rubber Company; vice-president, I. Ely Reed, vice-president of the Mercer Rubber Company; secretary, Charles E. Stokes, Jr., vice-president of the Home Rubber Company; treasurer, Horace B. Tobin, president of the Woven Steel Hose & Rubber Company.

Rubber Substitute Factory

Tyson Brothers, Woodbridge, N. J., and the Gardner Industrial Corporation, Gardner, Mass., are having plans prepared for a two-story factory for the manufacture of rubber substitutes. The plans are being prepared privately.

Foxboro Acquires New Unit

The pyrometer division of the Wilson-Maeulen Company, Inc., has merged with the Foxboro Company, Foxboro, Mass. This action, it is announced, has followed 25 years of close and friendly cooperation between the two companies and has been made in the interest of better service.

Seiberling Meeting December 28

Stockholders of the Seiberling Rubber Company have been notified that the annual meeting has been postponed until December 28 from December 21. F. A. Seiberling, president of the company, has been vacationing in Hawaii and could not return to Akron in time for the earlier date.

RUBBER COMPANY STOCKS DECLINE TO NEW LOWS

Eleven rubber company stock issues declined to new low levels for 1931 or longer in the course of the fortnight. Practically all shares closed with net losses for the period, although the rally of December 18 carried rubber company stocks up from their bottom levels.

Closing prices of the stocks of the principal companies in the industry on December 19, compared with the close of December 5 and with the high and low thus far reached in 1931, are shown in the following table:

	Last Price		—1931—	
	Dec. 19	Dec. 5	High	Low
Aetna	—	—	5	2
Ajax	—	—	½	¼
American Hard Rubber	—	—	35¼	30
Dayton "A"	—	—	—	—
Faultless	24⅜	—	37	24⅜
Firestone	—	14	21½	12⅞
do. 6% pfd.	—	51¾	66½	49⅝
Fisk	¼	¼	⅞	¼
do. 1st pfd.	⅝	½	3	½
General	—	—	140	50
do. pfd.	—	—	87½	64⅞
Goodrich	4	5¾	20⅞	3⅞
do. pfd.	13	19	68	10
Goodyear	17½	19¼	52¾	13¾
do. 1st pfd.	42¼	—	91	35
India	—	8	13½	6
Intercontinental	—	—	4½	¼
Kelly-Springfield	1¼	—	3½	⅝
do. 6% pfd.	—	—	45	10
Lee	2¼	—	4¾	1⅞
Mohawk	—	—	8	1¾
do. pfd.	—	—	35	25
Norwalk	—	—	2	½
Pirelli	—	—	39¾	26½
Raybestos-Manhattan	9¾	11½	29¼	8½
Seiberling	—	—	10¾	4
do. pfd.	—	—	50	32
U. S. Rubber	4¼	4¾	20¾	3½
do. pfd.	7½	8½	36⅛	6⅛

VANCOUVER RUBBER PORT IS PLANNED BY SHIPPERS

The establishment of Vancouver, British Columbia, as Canada's rubber distribution port will be the subject of negotiations in New York between representatives of Singapore rubber shippers and officials of the Canadian Pacific Railway, according to R. M. Prior, director of Hecht, Levis & Kahn.

An initial business of 1,000 tons a month will go to Vancouver if satisfactory arrangements for rates and storage can be made with the Canadian Pacific Railroad, Mr. Prior said. Stocks of rubber will be kept there for distribution as need arises to the manufacturers in Toronto, Hamilton, Montreal, and to Akron, Ohio, plants whose management does not insist upon carriage of their raw materials over United States steamship and rail lines.

Canadian rubber consumption annually aggregates approximately 35,000 tons, Mr. Prior estimated. Rubber used in Canada now comes in through Eastern ports. Most of it from the Malaya States and Dutch East Indies is carried via the Suez Canal. American importers give the shippers free transit storage in New York, and it is a similar concession that Mr. Prior's principals want from the Canadian Pacific Railroad. Suitable rail rates are the other factor about which Vancouver's future in the rubber market hinges.

GOLF BALL WEIGHT LIMIT WILL AGAIN BE CHANGED

The United States Golf Association has agreed to raise the weight limit in response to the numerous complaints registered against the larger and lighter ball which was introduced this year. "Effective for play January 1, 1932," the statement by the executive committee of the association says, "the size of the golf ball shall not be less than 1.68 inches in diameter, and the weight shall not be greater than 1.62 ounces avoirdupois."

The new "balloon" ball which caused so much criticism was of the same size, but its weight was limited to 1.55 ounces. Previously the regulations had specified a ball with a maximum diameter of 1.62 inches and a maximum weight of 1.62 ounces.

AKRON RECLAIMING CO. RE-ELECTS ITS OFFICERS

J. B. Huber was reelected president of the Akron Rubber Reclaiming Company at the annual meeting held at Akron, O., on December 7. Other officers reelected were William Welch and J. M. Alderfer, vice-presidents; R. J. Houston, secretary and treasurer. C. W. Seiberling, R. M. Kilmore, Alfred Henry and Allen Ayres, together with Messrs. Huber, Welch and Alderfer, comprise the directorate.

The Midwest Rubber Reclaiming Company, affiliate of Akron Rubber Reclaiming at East St. Louis, Ill., has just omitted the dividend on its no-par preferred stock. The shares paid $1 September 1.

New Rubber Goods

General Jumbo Tire

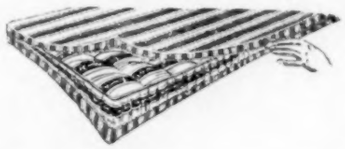
Described as the first passenger car tire to be designed with a triangular instead of a round cross-section, the Jumbo casing has just been introduced by the General Tire & Rubber Company. With almost straight, stream-lined sidewalls, this tire will carry two and one-half times the volume of air contained in the ordinary balloon tire and will operate at about one-third of the air pressure required for ordinary balloons. Built like a pyramid, with its apex at the tread and the broad base attached directly to an enlarged hub, the new casing will, in the manufacturer's opinion, actually eliminate automobile wheels. In service the large volume and low air pressure give motorists the sensation of "floating" over the road, it is said, and the tire carries a car easily and smoothly over obstructions that would seriously damage both tires and car if ordinary balloons were used. The triangular cross-section construction is claimed to mark the first advance over the "doughnut" type of low pressure casing as the stream-line Jumbo does not spread out on the road as the tire flexes. The development of this casing has been carried along by General engineers simultaneously with the development of General's stream-line airplane tire, which was announced last May.

Rubase Paint

The Rubase Corporation, 1252 Ramona Avenue, Lakewood, O., has announced a new impervious paint for maximum protection against corrosive destruction by moisture and acid fumes, and has named it Rubase. The company claims that Rubase is composed of the highest quality varnishes and pigments, and has a principal base of live rubber in solution, reaching a content up to 57 per cent. The manufacturers state that it is easy to apply, may be brushed or sprayed, and that it dries hard in four hours, with a medium gloss with glaze. A variety of colors are available.

Sanicot Mattress Cover

The Sanicot rubber-coated waterproof mattress cover is being offered to hospitals, hotels and other institutions requiring protection for their mattresses against germs, impurities and moisture. These mattress covers fit the mattress accurately and are instantly closed and sealed with slide fasteners. They offer the advantages of thorough

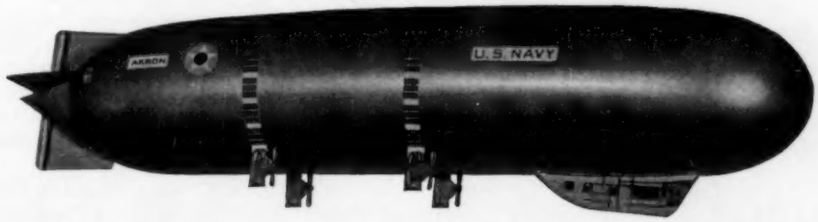


cleansing without removal from the mattress. They will endure washing with soap and hot water; this cleansing and sterilization process will in no way injure the fabric or the waterproofing. Sanicot waterproof covers are also offered for pillows and cushions of all sizes. These covers are being sold in the New York area by R. B. Martie, Inc., 51 West 21st Street, New York City, as exclusive metropolitan distributors.

Production Men to Meet

The American Management Association will conduct a Production Planning and Control Conference at the Van Cleve Hotel, Dayton, O., on January 19 and 20. During the sessions, the delegates will visit the factories of the Dayton Rubber Manufacturing Company, the Inland Manufacturing Company and other Dayton plants.

Oak Rubber Offers "Akron" Toy Airship



THE "Akron" Toy Airship, closely imitating the appearance of the world's newest and largest airship, is being made by the Oak Rubber Company at Ravenna, O. This new item from the Oak factory is sold in a neat white envelope printed in red and blue, and bearing instructions for assembling the toy. The outfit consists of a large size silver airship balloon and several cut-out paper parts for making the control car, tail fins, propellers and other features of the toy. These paper cut-outs are made of gummed stock, which makes it a simple operation to attach them to the balloon.

Names in the News

ARTHUR HUDSON MARKS, director and member of the executive committee of the B. F. Goodrich Company, will become president of the Aeolian Skinner Organ Company, Inc., when its organization is completed January 2. Mr. Marks has been president of the Skinner Organ Company which is being merged with the pipe organ division of the Aeolian Company of New York to form the new company.

DR. KARL HUERTTLE, chief of inspection for the Goodyear-Zeppelin Corporation, has sailed for Europe for his first six weeks in his homeland since coming to America with DR. KARL ARNSTEIN and other Zeppelin builders. Dr. Huerttle will spend Christmas in Germany and, after a vacation in the Alps, will stop at Friedrichshafen before returning.

L. L. SMITH, assistant treasurer of the B. F. Goodrich Company, was toastmaster at a dinner to the company's division and district credit managers at the Portage Country Club, Akron, O., on December 9. The dinner ended a two-day discussion of the company's wholesale and retail credit policies for the coming year. Speakers at the dinner included S. B. ROBERTSON, vice-president; V. I. MONTENYOHL, treasurer; C. B. O'CONNOR, sales manager; and F. S. MORELEY, treasurer of the Pacific Goodrich Rubber Company.

C. L. GALLAGHER, of the real estate department of the Goodyear Tire & Rubber Company, addressed the Akron Real Estate Board December 7 on the subject of President Hoover's recent conference on home ownership, which he attended.

DR. WEBSTER N. JONES, general superintendent of processing at the B. F. Goodrich Company, attended the annual convention of the American Institute of Chemical Engineers at Atlantic City, N. J., from December 9 to 11.

R. J. JONES, former branch manager for the B. F. Goodrich Footwear Corporation in Boston and New York, has been named manager of the combined Goodrich and Hood Rubber Products Corporation branch in Minneapolis. Mr. Jones has been associated with the rubber industry 18 years. He is a native of New England and formerly traveled that territory and northern New York. In the Minneapolis position he succeeds A. S. BIESING, former Hood branch manager, who is now merchandising manager for the combined companies in Chicago, and N. B. LATHROP, former Goodrich manager, who is associated with the Gordon Ferguson Company, St. Paul.

VICTOR WICHUM, chief engineer of the C. J. Tagliabue Manufacturing Company, Brooklyn, N. Y., was on December 3 elected vice-president of the Exhibitors Committee Industrial and Power Shows, Inc., for 1932. This organization operates without profit to improve conditions relating to industrial exhibitions and maintains contact with the management of a wide variety of such shows. Mr. Wichum will also serve as a director in charge of the instruments and accessories group.

E. T. MORRIS, assistant advertising manager of the B. F. Goodrich Rubber Company, has resigned to become account executive in Meldrum & Fewsmith, Inc., a Cleveland advertising agency. Mr. Morris will assume his new duties January 1. He joined Goodrich four years ago after several years in advertising work in Cleveland and Chicago, and became district advertising manager for Goodrich with headquarters in Philadelphia. A year later he was appointed advertising manager of the Pacific Goodrich Rubber Company, Los Angeles, Cal., and after two years returned to the Akron offices in charge of Goodrich tire advertising.

W. C. GRAY, who has been for four years manager of publicity and sales promotion work for the W. A. Sheaffer Pen Company, Fort Madison, Iowa, has resigned his position with Sheaffer. He expects to return to Northern Ohio where he has spent the most of his business life. After experience in the newspaper business, he entered the rubber industry at Akron, O., immediately after leaving the army at the close of the war to handle publicity, house-publication, and sales-by-mail work for one of the large Akron rubber companies with which enterprise he was identified for nearly seven years. Mr. Gray will probably reenter the rubber business after the first of the year.

L. M. SIMPSON, general sales manager of the tire division of the United States Rubber Company, visited the Samson tire factory at Los Angeles, Cal., during the week of December 14. Earlier in the month he made a tour of northwestern distributing centres, accompanied by J. B. MAGEE, Pacific Coast sales manager of the company.

V. R. JACOBS, assistant manager of aeronautic sales for the Goodyear Tire & Rubber Company, spoke before 1,000 employes of the Public Service Electric & Gas Company at Newark, N. J., on December 7. His topic was "Lighter-Than-Air Transportation."

HARRY J. HOSKING has resigned his position in the research laboratory of the Roessler & Hasslacher Chemical Company at Niagara Falls, N. Y., to take up similar work with Foster D. Snell, Inc., Brooklyn, N. Y. W. C. PINKERTON, formerly with the International Exposition Company, has also joined the Snell organization as industrial representative.

LEONARD K. FIRESTONE, son of HARVEY S. FIRESTONE, president of the Firestone Tire & Rubber Company, has taken over the active management of the Firestone Service Stores, Inc., branch at West Palm Beach, Fla. He previously completed a thorough course of training in the Firestone training school at Akron, O.

P. L. DILDINE, factory standards manager of the B. F. Goodrich Company, has been reelected a director of the American Management Association and vice-president in charge of the shop methods division.

W. S. WHITTAKER, president and general manager of the Inland Manufacturing Company, spoke before the Miami Valley Personnel Association at the Engineers Club, Dayton, O., on December 8. R. M. WEIMER, personnel director of the Dayton Rubber Manufacturing Company, presided.

W. C. YOUNG, manager of aeronautic sales for the Goodyear Tire & Rubber Company, spoke before the Laymen's Association of the First Presbyterian Church, Niagara Falls, N. Y., on December 7. His subject was "Air Travel."

LOUIS RENAULT, manufacturer of automobiles under that name, was a visitor to the factory of the Firestone Tyre & Rubber Company, Brentford, England, late last month.

J. A. MACMILLAN, president and general manager of the Dayton Rubber Manufacturing Company, addressed a group of district managers of the company at a conference late last month at the factory at Dayton, O.

ARTHUR B. DOUGALL has been appointed sales promotion manager of the automotive division of the Thermoid Rubber Company, Trenton, N. J. He was for several years district manager of the Delaware, Maryland and District of Columbia territory.

DR. GEORGE F. ZOOK, president of Akron University, addressed the Akron Rotary Club December 15 on the need for the establishment of a rubber research laboratory similar to the Guggenheim Lighter-Than-Air Institute at Akron.

H. H. HANNA, assistant treasurer of the Goodyear Tire & Rubber Company, spoke on the foreign credit situation before the members of the Akron Exchange Club on December 16.

DR. HOWARD E. FRITZ, chemical sales division manager of the B. F. Goodrich Company, addressed the graduates of the Goodrich apprentice school at a meeting in Polsky's Dining Room, Akron, O., on December 14.

· Rubber News Around the World ·

MEXICO TO MANUFACTURE SYNTHETIC RUBBER TIRES

Joliet Tellez Giron, research chemist who has developed a process of making synthetic rubber from petroleum, has announced that a factory will be opened in Mexico next month to produce approximately 300 tires and 5,000 heels daily from this material, according to United Press dispatches from Mexico City. The Compania Hulera Mexicana has been organized for this purpose and is headed by ex-President Plutarco Elias Calles, together with many other influential leaders of the country.

The inventor says that he had the idea for 17 years that petroleum in its early stages closely resembles rubber, and that his formula merely returns petroleum to its early stages. With a crude petroleum base, he mixes ground sugar cane or other ingredients that have a higher sugar content, according to the United Press, and he then refines and "fries" the compound in the sun and vulcanizes it with sulfur. Senor Giron was for several years employed by the Compania Hulera El Popo at Mexico City.

LITHUANIA IS PLANNING RUBBER GALOSH FACTORY

Backed unofficially by the Lithuanian government, several shoe manufacturers of that country are considering the erection of a rubber galosh factory at Sanciai, a suburb of Kovno. Those most interested are Ch. Fraenkel, of Schaulen, largest leather and shoe manufacturer in Lithuania, and G. Falkovskis, one of the large shoe manufacturers and retailers and agent for the Soviet Russian "Treugolnik" galoshes.

Lithuania uses annually 500,000 pairs of galoshes, worth $600,000, or 5 per cent of the country's total imports. Latvia is the largest supplier, followed by Soviet Russia and Finland.

REPORT BATA PLANNING PLANT IN SWITZERLAND

A Swiss commercial paper has published a report that the Swiss branch of T. & A. Bata, leather and rubber shoe manufacturer of Zlin, Czechoslovakia, has purchased 84 acres of land near Moehlin, Canton Aargau, for the purpose of building a factory for leather and rubber shoe uppers and soles, and perhaps also boots and shoes. Another trade paper suggests a similar move, but declares that rubber tires will be manufactured.

The value of the purchased land is given at $50,000 and the number of workers to be employed at 4,000.

After three months on part time, the Canadian Dunlop factory has resumed full time work.

Rubber Institution Programs

Members of the Manchester and District Section of the Institution of the Rubber Industry will meet at the Engineers' Club, Manchester, on January 4 to hear a paper by B. D. Porritt on "The Value of Organized Research in the Rubber Industry." R. H. Comly will address the West of England Section on "Sales Methods, Campaigns and Advertising for the Marketing of Rubber Products" at the George Hotel, Trowbridge, on January 6. The meeting of the Midland Section January 7 at the Grand Hotel, Birmingham, will be addressed by W. J. Condon on "Production Control of the Rubber Factory."

United States Losing Lead In European Footwear Trade

PRACTICALLY 44 per cent of United States rubber footwear exports in 1930 were destined for European markets. With more than 3,435,000 pairs valued at $4,393,000, the United States share of the European rubber footwear business was greater than that of any other exporting country, but a Department of Commerce survey shows domestic firms to be losing this advantage this year.

Germany furnished the strongest competition last year, rough calculations revealing an export of 3,400,000 pairs to European markets, which represents more than 80 per cent of the total German exports. The United Kingdom, though the greatest field for foreign rubber footwear manufacturers, supplied 1,131,000 pairs to the Continent of Europe.

Considering individual markets, the United Kingdom is by far the largest importer of rubber footwear in the world. In 1930 British imports totaled over 14,900,000 pairs —several times more than that imported by Germany, the second European market. German imports amounted to 2,700,000 pairs, while the next markets in importance were the Netherlands and Switzerland, with about 1,000,000 pairs each. Czechoslovakia and Belgium also take large quantities, and Denmark and Norway are not far behind as consumers.

The British rubber footwear trade has been greatly depressed for the past year or so. The appearance of large quantities of cheap footwear from Japan, Czechoslovakia, Belgium and other countries exporting largely on a price basis has resulted in price slashing, unfair methods of competition, and otherwise upset the morale of the entire trade.

Germany, second European market, has seen her imports drop off tremendously since November, 1930. To the end of June, 1931, only 800,000 pairs had been imported, while in the six months ended June, 1930, imports totaled nearly 1,700,000 pairs.

Local production of rubber footwear has caused a decreased demand for the imported variety in Czechoslovakia. In 1929 imports reached a high point of 2,200,000 pairs, only to drop 50 per cent in 1930 to 1,150,000 pairs.

In the Belgian market, British exports appear to show the greatest progress and are probably the only ones taking an increased share of the 1931 business.

The Danish market has been the scene of stiff competition among local and foreign manufacturers during recent months, and the resultant price-slashing has had a noticeable effect on the trade of the various countries represented.

Switzerland, a country of more than 1,000,000 pairs annual capacity, differs from other large European markets in that virtually all its rubber footwear demands are supplied by importation. Of its total imports, 37 per cent is supplied by Germany, 18 per cent by the United States, and the rest by other European countries.

The French demand for imported rubber footwear, as shown by monthly exports from Canada, United States, United Kingdom and Germany, has in general been steadily increasing for several years. This trend may be contrasted with an exactly opposite tendency in French exports, indicating an unsettled condition in the domestic industry.

In the Italian market, American supremacy among foreign suppliers appears to have ended abruptly with a greatly decreased Italian demand in 1931. The past six months saw American exporters displaced by the products of both British and German manufacturers.

The Netherlands is a market consuming practically 2,000,000 pairs of imported rubber footwear annually, and yet one to which United States exports are almost too insignificant to mention. Though the volume obtained by Belgian and German exporters—and more recently Polish—is undoubtedly due to a low-priced article, the fact that the United Kingdom stands up well in the competitive picture would seem to indicate that more intensive participation by American manufacturers is warranted.

Norway has been no exception to the severe price cutting in all Scandinavian markets. The United States has for the past four years led the United Kingdom, Germany and Canada in exports to Norway, and up to the present year regularly increased its share of the total trade. This year, however, our share dropped from 62 to 40 per cent.

CLASSIFIED ADVERTISING

Five cents a word, minimum charge $2.00, payable in advance.
Address replies to Box Numbers.
THE RUBBER AGE
250 West 57th St., New York City

HELP WANTED

OLD ESTABLISHED COMPANY, manufacturing high-grade line of mechanical rubber goods, has openings for several salesmen with clientele. State age, experience, previous connection, territory, clientele. Commission with drawing account can be arranged for proper parties. Address Box 645, THE RUBBER AGE.

POSITIONS WANTED

Production
Engineering Executive

EXPERIENCE in sales of Equipment to Rubber Manufacturers. Possesses thorough knowledge of the manufacture of hard rubber, drug sundries, molded mechanicals, and specialties.

Present connection ten (10) years; previously associated with the largest rubber firms in their respective lines.

Open for a full or part time proposition. Would consider sales representation with either an equipment manufacturer or a large rubber manufacturer.

Thoroughly familiar with the Philadelphia and New York territories and have covered the New England and the Great Lakes districts.

Location immaterial, best of health, age 37 years. Can furnish excellent credentials. Address Box 644, THE RUBBER AGE.

PUBLICITY AND SALES Promotion man or Advertising Manager—Wide experience in rubber and allied industries. Has also carried out considerable market research work. Can take entire charge of department. Expert knowledge of printing and direct mail. Moderate salary or part time on fee basis. Address Box 635, THE RUBBER AGE.

Let me take care of your
CHEMICAL WORK
and
MANUFACTURING PROBLEMS
on a monthly fee basis.

FREDERICK J. MAYWALD
Rubber Chemist
305 Hoboken Road
Carlstadt **New Jersey**

POSITIONS WANTED

PURCHASING AGENT, 38 years old, 10 years' experience buying mill supplies. Address Box 638, THE RUBBER AGE.

FABRIC ANALYST—Textile school graduate, 9 years' experience in fabrics. Capable of setting up specifications and developing. Know manufacture and present prices. Able to take charge of inspection department and know reasonable tolerances to allow. Will go anywhere. Address Box 636, THE RUBBER AGE.

ENGINEER—University technical education. Business and management training. 12 years' design, installation, maintenance and construction rubber machinery. 4 years' industrial layouts, costs, safety, employment, development, production and organization work. Executive training and ability. Age 38, married. Any location Address Box 640, THE RUBBER AGE.

FACTORY EXECUTIVE desires connections in Chicago or vicinity. Very broad experience in plant supervision, accounting and manufacture of hose, belting and packings. Can offer potential outlets for molded and other items. References from previous connection and others reveal trade acquaintance. Address Box 641, THE RUBBER AGE.

CREDIT and collection manager, 23 years' experience in rubber industry, desires connection. Has also been office manager, cashier and possesses a good practical knowledge of general accounting. Address Box 642, THE RUBBER AGE.

SEVENTEEN years' experience in tire production, last ten years as Superintendent of plant. Desire proposition to sell and distribute products used by the tire industry, with office in Akron. Address Box 643, THE RUBBER AGE.

Consulting Rubber Technologist

PRACTICAL

Twenty years' experience with the largest and most successful companies in the country

Physical and Chemical Testing
Special facilities for abrasion and quick age tests

Expert Advice to Correct Factory Trouble

New Processes and Formulas Developed

R. R. Olin Laboratories
P. O. Box 372, AKRON, OHIO
Telephones: Sherwood 3724; Franklin 8551

POSITIONS WANTED

SALESMAN, 38 years old, 10 years' experience calling on the rubber trade, willing to travel. Address Box 637.

RUBBER TECHNOLOGIST, B.S., age 32, eight years' experience in manufacture of druggist sundries; factory control and development; available immediately. Box 634.

BUSINESS OPPORTUNITY

Tariffs

THOSE wanting rubber goods manufactured and distributed in Britain, should write The Empire Rubber Company, 25 Victoria Street, London, S. W. 1.

SALESMAN now handling line of drug sundries, golf balls, toys, etc., in Ohio, West Virginia, Michigan, Western Pennsylvania, Western New York, is desirous of adding a side line in above territory. Now covering following trades: Wholesale Drug, Hardware, Sporting Goods, Stationery, Department Stores, Syndicate and Chain Drug Stores. Have following and can increase your business. Address Box 646, THE RUBBER AGE.

British Tariffs

MANAGING DIRECTOR of Rubber Companies with wide experience would negotiate with an up-to-date American concern wishing to erect works in England. Spare land, power and water available, or Solo sites for separate company. Finance for a reputed company would be considered—Would collaborate as English Director and supervisor with American management. Advise class of goods and turnover expected, suggestions re Capital supported by Balance Sheets (strictly confidential). Box L11, W. H. Smith & Son, Ltd., Blackfriars, Manchester, England.

SURPLUS RAW MATERIALS

WE PURCHASE surplus and discontinued stocks of Chemicals, Pigments, Accelerators, Solvents and Raw Materials, regardless of quality or condition. Send us a complete list of such dead stocks, whereupon we will make you a cash offer.

BARCLAY CHEMICAL COMPANY
154 Chambers Street, New York City

CASH FOR YOUR SURPLUS AND CLOSE OUT.—Rubber Goods, Chemicals, Colors, Pigments, Oils, Waxes, Glues, Accelerators, Metals. Any quanity. Any condition. Also Wastes, By-Products, Residues of all kinds.

CHEMICAL SERVICE CORP.,
36 Park Row, New York, N. Y.

LATE MARKET PRICES

RUBBER—COTTONS AND FABRICS—CHEMICALS

NEW YORK, DECEMBER 19, 1931

Crude Rubber

REVIVAL of hope that some form of restrictive effort would shortly be successful caused a sharp rally of seven-eighths of a cent a pound on the outside market and more than 80 points on the Rubber Exchange from the bottom levels of December 8. From 4¼ cents a pound on the latter date, the market jumped to 5⅛ cents by December 19.

This rise was accomplished in the face of bearish statistics and of weakness in the securities markets. It was, therefore, entirely based on expectations that the British and Dutch producing interests and their respective governments would agree on some practicable method of curtailing output during 1932. To date, however, no official confirmation of these activities has been made.

The Rubber Exchange of New York during the fortnight reduced its daily trading price limit from five to three cents a pound.

Prices quoted on the New York outside market at the close December 19 follow:

Plantations—			
Ribbed Smoked Sheets—			
Spot-Dec.	.05	@	.05¼
January	.05	@	.05⅛
Jan.-Mar.	.05⅛	@	.05¼
First Latex, crepe spot	—	@	.05⅝
Amber Crepe, No. 2	—	@	.04⅞
Amber Crepe, No. 3	.04¾	@	.04⅞
Amber Crepe, No. 4	—	@	.04¾
Brown Crepe, Clean thin	.04¾	@	.04⅞
Brown Crepe, rolled	—	@	.04⅝
Liquid Latex, per gal.	.70	@	.80
Paras—			
Up-river, fine	—	@	.05½
Up-river, coarse	Nominal		
Acre Bolivian, fine	—	@	.06
Caucho Ball, Upper	.03	@	—
Centrals—			
Central scrap	.04	@	—
Esmeraldas	.04	@	—
Balata—			
Block, Ciudad	—	@	.18

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
Spot-Dec.	—	@	3¼d
January	3¼	@	3⅜d
February	—	@	3⅜d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot	—	@	3¼d

Daily closing prices and sales on the Rubber Exchange of New York are given in the table below:

Reclaimed Rubber

Consumption of reclaimed rubber during the month of November sank to a new low level for recent years at 7,492 long tons, according to the statistics compiled by the Rubber Manufacturers Association. This is equal to only 32.6 per cent of the tonnage of crude rubber consumed during that month. Production of reclaim in November totaled 7,892 long tons, leaving stocks at the close of the month at 17,662 long tons. Late price quotations for the various grades are as follows:

High Tensile			
Super-Reclaim Black	lb.	.06 @	.06¼
High Tensile Red	lb	.06¼ @	.06½
Shoe			
Unwashed	lb.	.05¼ @	.05½
Washed	lb.	.06½ @	.06¾
Tube			
No. 1 (Floating)	lb.	.07½ @	.08
No. 2 (Compounded)	lb.	.06 @	.06½
Tires			
Black	lb.	.04¾ @	.05¼
Black, selected tires	lb.	.05 @	.05¼
Dark Gray	lb.	.06 @	.06¼
Light Gray	lb.	.06¼ @	.06½
White	lb.	.07½ @	.07⅝
Truck, Heavy Gravity	lb.	.06 @	.06¼
Truck, Light Gravity	lb.	.06¼ @	.06½
Miscellaneous			
Mechanical blends	lb.	.03¾ @	.04¼

Scrap Rubber

The market for scrap rubber has been a little firmer with the rise in crude rubber quotations, despite the low November reclaim consumption figure. Export business continues to be a strong branch of the trade. The latest price quotations for the different grades follow:

(Prices to Consumer)

Auto tire peelings	ton	19.00	@21.00
Mixed auto	ton	6.00	@ 8.50
Bicycle tires	ton	5.00	@ 6.00
Clean solid truck tires	ton	23.50	@25.00
Boots and shoes	ton	15.00	@17.50
Arctics, untrimmed	ton	10.00	@12.50
Inner tubes, No. 1	lb.	.03¼ @	.03⅝
Inner tubes, No. 2, compounded	lb.	.01¾ @	.01⅞
Inner Tubes, Red	cwt.	1.40	@ 1.50
Air Brake Hose	ton	9.00	@10.00
Rubber Hose	ton	8.50	@ 9.00

Cotton

DURING the course of the fortnight the price quotations for cotton showed a net gain of a quarter of a cent a pound. The spot price for middling upland at New York closed on December 5 at 6.15 cents, dropped to an even 6.00 cents by December 9, but rallied steadily from that time to end the period at 6.40 cents.

Domestic consumption in November was somewhat disappointing, being only slightly higher than the figures for the same month last year. There is, however, considerable hope for a gain in the export market.

High, low and closing prices on the New York Cotton Exchange on December 19 were as follows:

	High	Low	Close	Close
		Dec. 19		Dec. 5
Dec.	6.26	6.23	6.24	5.99
Mar.	6.48	6.42	6.42	6.23
May	6.68	6.60	6.60	6.41

Tire Fabrics

In sympathy with the slight rise in the raw cotton market, tire fabric prices have been a little firmer. Current quotations are as follows:

(Prices Net at the Mill)

CORD			
Peeler, carded, 23/4/3	lb.	.25½ @	.26
Peeler, carded, 23/5/3	lb.	.24½ @	.25
Peeler, carded, 13/3/3	lb.	.22 @	.22½
Peeler, carded, 15/3/3	lb.	.22½ @	.23
Egyptian, carded, 23/5/3	lb.	.35 @	.36
Egyptian, combed, 23/5/3	lb.	.40 @	.40½
CHAFERS			
Carded, American, 8 oz.	lb.	.23 @	.23½
Carded, American, 10 oz.	lb.	.23 @	.23½
Carded, American, 12 oz.	lb.	.22½ @	.23
Carded, American, 14 oz.	lb.	.20½ @	.21
LENO BREAKER			
Carded, American, 8¼ oz.	lb.	.20 @	.25
Carded, American, 10¼ oz.	lb.	.20 @	.25
SQUARE WOVEN			
Carded, American, 17¼ oz. 23-11 ply	lb.	.24½ @	.25
Carded, American, 17¼ oz. 10-ply	lb.	.20½ @	.21

Sheetings

Most grades of sheetings showed slight weakness during the fortnight. Late price quotations follow:

40-inch, 2.50-yard	yd.	— @	.05⅝
40-inch, 2.85-yard	yd.	.05 @	.05¼
40-inch, 3.15-yard	yd.	— @	.05⅝
40-inch, 3.60-yard	yd.	— @	.04¾
40-inch, 3.75-yard	yd.	— @	.04
40-inch, 4.25-yard	yd.	— @	.03¾

Ducks

Enameling ducks and hose and belting ducks were a cent to a cent and a half lower in price by the close of the fortnight. Latest prices follow:

Belting and Hose	lb.	— @	.19
Enameling	lb.	.18 @	.20
Single filling	lb.	.08 @	.08¼
Double filling	lb.	.09½ @	.09¾

Closing Prices on Rubber Exchange of New York, Inc.

No. 1 Standard Contract of 10 Tons

FROM DECEMBER 7 TO DECEMBER 19, 1931

		Spot	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Sales
Dec.	7	4.30	4.30	4.37	4.44	4.51	4.56	4.61	4.67	4.74	4.79	4.85	4.90	5.00	99
	8	4.25	4.17	4.25	4.33	4.42	4.46	4.51	4.57	4.63	4.69	4.75	4.82	4.92	92
	9	4.25	4.23	4.32	4.41	4.51	4.56	4.61	4.66	4.72	4.78	4.85	4.90	4.95	84
	10	4.63	4.60	4.67	4.75	4.83	4.89	4.96	5.01	5.06	5.14	5.22	5.29	5.37	167
	11	4.54	4.52	4.59	4.67	4.75	4.80	4.85	4.91	4.98	5.05	5.12	5.19	5.27	167
	12	4.53	4.52	4.59	4.67	4.75	4.80	4.85	4.90	4.96	5.03	5.10	5.17	5.25	25
	14	4.62	4.60	4.67	4.75	4.83	4.87	4.92	4.99	5.06	5.11	5.16	5.23	5.31	104
	15	4.47	4.45	4.52	4.60	4.68	4.74	4.80	4.85	4.90	4.95	5.01	5.09	5.17	74
	16	4.38	4.36	4.40	4.48	4.56	4.61	4.66	4.71	4.76	4.81	4.86	4.94	5.02	85
	17	4.42	4.40	4.46	4.53	4.60	4.65	4.70	4.75	4.80	4.87	4.94	5.02	5.10	20
	18	4.71	4.69	4.74	4.79	4.84	4.89	4.94	5.00	5.05	5.11	5.18	5.26	5.34	79
	19	5.02	5.00	5.07	5.14	5.22	5.27	5.33	5.38	5.44	5.49	5.54	5.62	5.70	190

CHEMICALS

MOST rubber factories have been marking time during the past few weeks, waiting for the turn of the year to start production on a higher scale. This will result naturally in a higher consumption of rubber chemicals and compounding ingredients. Even if the expected increase in tire demand does not materialize soon after the first of the year, it is felt that manufacturers will have to replenish their depleted stocks of casings and tubes to maintain efficiency in merchandising.

ACCELERATORS

Organic			
A-1	lb.	.24 @	.27
A-5-10	lb.	.33 @	.36
A-7	lb.	.55 @	.59
A-11	lb.	.62 @	.66
A-16	lb.	.57 @	.61
A-19	lb.	.58 @	.62
A-20	lb.	.64 @	.68
A-32	lb.	.80 @	.95
Aldehyde ammonia, crystals	lb.	.65 @	.70
Altax	lb.		
Aniline oil, drums, f.o.b. works	lb.	.14½@	.16
Captax	lb		
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyguanidine	lb.	.42 @	.44½
Diphenylguanidine	lb.	.30 @	.32½
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde aniline	lb.	.37½@	.40
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.58½@	.61
Lithex	lb.	.18 @	.20
Methylenedianiline	lb.	.37½@	.40
Monex	lb.	3.25 @	—
Oxynone	lb.	.68 @	.80
Phenex	lb.	.75 @	—
Pipsol	lb.	4.30 @	4.50
R & H 40	lb.	.40 @	.41
R & H 50	lb.	.40 @	.41
R & H 397	lb.	.75 @	.76
R-2	lb.	1.95 @	2.15
Safex	lb.	1.20 @	1.25
SPDX	lb.	.75 @	—
Super-Sulphur No. 1	lb.		
No. 2	lb.		
Tensilac, No. 39	lb.	.40 @	.42½
Tensilac, No. 41	lb.	.50 @	.52½
Thermio F	lb.	.50 @	.55
Thiocarbanilid, drums	lb.	.20 @	.22
TMTT	lb.	3.00 @	3.25
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.58 @	.60
Tuads	lb.		
Ureka	lb.	.75 @	1.00
Vulcanex	lb.		
Vulcone	lb.		
Vulcanol	lb.		
Z-88-P	lb.	.50 @	.80
Zimate	lb.		
Inorganic			
Lead, sublimed blue	lb.	.08¼@	—
Lead, white	lb.	.08½@	.08¾
Litharge, domestic	lb.	.06¼@	.07
Magnesia, calcined, light	per 100 lb.	5.35 @	5.45
heavy	per 100 lb.	3.65 @	3.75

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.35 @	.36
Ultramarine	lb.	.06 @	.32
Browns			
Sienna, Italian	lb.	.05½@	.12½
Umber, Turkey	lb.	.04½@	.07
Greens			
Chrome, light	lb.	.30 @	.32
medium	lb.	.31 @	.33
dark	lb.	.34 @	.36
Chromium Oxide, bbl.	lb.	.34½@	.35½
Reds			
Antimony crimson, 15/17	lb.	.40 @	.44
sulfur, free	lb.	.56 @	.66
golden, 15/17 F.S.	lb.	.20 @	.25
Indian English	lb.	.08 @	.11
Domestic (Maroon)	lb.	.11 @	—
Oximony	lb.	.13¼@	—
Red oxide, pure	lb.	.10 @	.12
Smith's 444 Crimson f.o.b. Springfield	lb.	.08¾@	.10
Rub-Er-Red, f.o.b. Easton	lb.	.08¾@	—
Venetian red	lb.	.08 @	.06
Vermillion, quicksilver, English	lb.	1.53 @	1.80
Whites			
Lithopone, Akcolith	lb.	.05 3/5@	.06
Lithopone, Albalith	lb.	.05¼@	.05¾
Lithopone, Azolith	lb.	.05¼@	.05¾
Lithopone, Vanolith	lb.	.05¾@	—
Titanium oxide	lb.	.21 @	—
Titanox B, f.o.b. St. Louis,	lb.	.06½@	.07
Titanox C, f.o.b. St. Louis,	lb.	.07 @	.07½
Zinc Oxide—American Process			
American Azo: ZZZ (lead free)	lb.	.06½@	.07
ZZ (leaded)	lb.	.06⅞@	.06⅞
Horsehead Brand: Special	lb.	.07 @	.07½
XX Green	lb.	.07 @	.07½
XX Red, lead free	lb.	.06½@	.07
Kadox, black label	lb.	.10⅜@	.10⅞
blue label	lb.	.09⅜@	.09⅞
red label	lb.	.08 @	.08½
St. Joe, black label	lb.	.06½@	.07
red label	lb.	.06½@	.07
Zinc Oxide—French Process			
Anaconda, lead free	lb.	.06½@	.07
Anaconda, selected lead free	lb.	.07 @	.07½
White seal	lb.	.11⅝@	.11⅞
Green seal	lb.	.10⅜@	.10⅞
Red seal	lb.	.09⅜@	.09⅞
Yellows			
Chrome	lb.	.16¼@	.17
Ocher, French medium	lb.	.02 @	.03
domestic	lb.	.01⅝@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate, lump	lb.	.10½@	.12
Asbestine	ton	14.75 @	18.00
Barium carbonate	ton	56.50 @	57.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½@	—
Bentonite	lb.	.02 @	.03
Blacks			
Arrow "Aerofloted"	lb.	.03½@	.08½
Bone Black	lb.	.06 @	.12½
Carbon, compressed	lb.	.03 @	.07
Carbon, uncompressed	lb.	.03 @	.07
Disperso, f.o.b. Louisiana	lb.	.03½@	—
Disperso, f.o.b. Texas	lb.	.036 @	—
Drop Black	lb.	.06 @	.14
Fumonex	lb.	.03½@	.07½
Excello, compressed	lb.	.04 @	.08
Gastex, f.o.b. Texas	lb.	.03 @	.06
Lamp Black	lb.	.10 @	.40
Micronex	lb.	.03½@	.08½
Thermatomic-Thermax	lb.		
Flex	lb.		
P-33	lb.		
United carbon, fob Tex.	lb.	.03½@	.08½
Velvetex carbon	lb.	.03 @	.06
Blanc fixe dry f.o.b. works	ton	75.00 @	90.00
Carrara filler	lb.	.01¾@	.02
Catalpo (fact.)	lb.	.02 @	—
Clay, Kaolin, domestic	ton	8.00 @	9.00
Aerfloted, Suprex	ton	8.00 @	20.00
Colloidal	lb.	.05 @	.08
Congaree, c. l. f.o.b. mine	ton	9.00 @	—
Dark Blue Ridge	ton		
Dixie	ton		
Langford	ton		
Lexington	ton	10.00 @	22.00
Mineral Flour, c.l. f.o.b. mine	ton	20.00 @	23.00
Par	ton		
Tensulite		15.00 @	—
Glues, extra white	lb.	.20 @	.25
medium white	lb.	.16 @	.20
Magnesia, carbonate	lb.	.08¾@	.11
Mica, white water grnd.	lb.	.06 @	.08
Off color (biotite)	lb.	.05 @	.07
Rotten Stone (powdered)	lb.	.02 @	.05
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	— @	2.57
Talc, domestic	ton	12.00 @	15.00
Pyrax A	ton		
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.75 @	2.00
Quaker	ton		
Superfine	ton	10.00 @	12.00
Sussex	ton		
Witco	ton	20.00 @	—
Zinc Carbonate	lb.	.09¼@	.10½
Zinc Stearate	lb.	.18½@	.22

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M. R.	ton		
Hard Hydrocarbon	ton		
Paradura	ton	62.50 @	65.00
Parmr, solid	ton	28.00 @	48.00
Pioneer. MR, sclid	ton	40.00 @	42.00
Pioneer-granulated	ton	50.00 @	52.00
R & H Hydro-Carbon	ton	27.05 @	29.00
Robertson, MR, solid	ton	34.00 @	80.00
M.R. (gran)	ton	38.00 @	80.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulfuric, 66 degrees	cwt.	1.60 @	1.95
Tartaric, crystals	lb.	— @	.26½
Acids, Fatty			
Laurex	lb.	.15 @	.16
Stearex	lb.	.13 @	.17
Stearic, double pressed	lb.	.17 @	.22
Alkalies			
Caustic soda, 76%	cwt.	2.90 @	—
Soda ash, 58% C.L.	cwt.	1.17½@	—
Oils			
Corn, refined, bbls.	lb.	.07 @	.08¾
Cottonseed, crude		— @	.04½
Cycline	gal.	.27 @	.34
Degras (c.l. 100 bbls.)	lb.	.03¾@	—
Less c.l. (10-25 bbls.)	lb.	.04 @	—
Lots less than 10 bbls.	lb.	.04¼@	.04½
Fluxrite	lb.	.05½@	.06½
Palm Lagos	lb.	.04 @	.05
Niger	lb.	.03½@	.04
Para-Flux	gal.	.17 @	—
Petrolatum, white	lb.	.08 @	.08½
Pigmentaroil	gal.	.18 @	.23
Pine, steam distilled	gal.	.54 @	.61
destructively distilled	gal.	.54 @	.55
Witco Palm Oil	lb.	.11 @	—
Witco Softener (f.o.b. wks.)	lb.	.02 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07⅛
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt.	bbl.	7.00 @	—
Rosin, grade K, 280 lb.	bbl.	— @	4.60
Pigmentar	gal.	.18 @	.23
Tar Retort, 50 gal.	bbl.	13.50 @	15.00
Solvents			
Acetone, pure	lb.	— @	.10
Alcohol, denatured, No. 1 bbls.	gal.	.28 @	.29
Benzol, 90%	gal.	.20 @	.21
Carbon, bisulfide	lb.	.05½@	.06¼
Carbon, tetrachloride	lb.	.06¼@	.07
Dryolene (f.o.b. Okla.)	gal.	.10 @	.10½
Gasoline, steel bbls.	gal.	.16 @	—
Naphtha, solvent	gal.	.26 @	.28
Rub-Sol (f.o.b. Okla.)	gal.	.09 @	—
Turpentine, spirits	gal.	— @	.37¼
wood	gal.	— @	.40
destructively distilled	gal.	.35 @	—
Waxes			
Beeswax, white	lb.	.34 @	.36
Carnauba	lb.	.26 @	.28
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06½@	.07
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffin (c.l.—f.o.b. N. Y.)			
Yellow crude scale	lb.	.02½@	—
White crude scale 124/126	lb.	.02½@	—
Refned, 125/127	lb.	.03⅝@	—
Refined, 128/130	lb.	.03¾@	—
Refined, 135/137	lb.	.05¼@	—
Refined, 138/140	lb.	.07¼@	—

ANTI-OXIDANTS

AgeRite, Gel	lb.		
Powder	lb.		
Resin	lb.		
White	lb.		
Albasan	lb.	.70 @	.75
Antox	lb.		
B-L-E	lb.	.57 @	.60
Neozone	lb.		
Oxynone	lb.	.68 @	.88
Resistox	lb.	.54 @	.57
Stabilite	lb.	.57 @	.62
Stabilite Alba	lb.	.70 @	.75
VGB	lb.	.55 @	.66

SPECIALTIES

Aromatics—Rodo	lb.		
Sunproof	lb.	.35 @	.37½
Sponge Paste	lb.	— @	.39
Tonox	lb.	.56 @	.60

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.08 @	.15

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½@	.04½
Sulfur flour, Ref'n'd, 100% pure (bags)	cwt.	2.40 @	2.75
Commercial (bags	cwt.	1.75 @	2.10
Telloy	lb.		
Vandex	lb.		

CARBON BLACK

SUPREME

FOR

AND OTHER RUBBER GOODS

Many years experience in the manufacture of High Grade Carbon Blacks, combined with exacting control tests, insures the consumer a product of the highest uniform quality.

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Pittsburgh **General Offices 306 Fourth Avenue** **Pennsylvania**

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Happy and Prosperous New Year

H. MUEHLSTEIN & CO.

INC.

The RUBBER AGE

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Toxic Substances

THROUGH the energetic work of the National Safety Council and the safety organizations in the various factories the rate of injuries and occurrence of illnesses, incident to industrial work, have been reduced in the rubber plants throughout the country, to a low point. In safety work, the part played by the company physician is often minimized, when in fact, it is a very important part of the safety program. THE RUBBER AGE has been pleased to carry, over a period of the last two years, a series of articles on 'Toxic Substances in the Rubber Industry,' by Dr. P. A. Davis of the Goodyear company. Attention is called to the 24th article of this series in this issue. The series has been a valuable contribution to safety literature for rubber factories.